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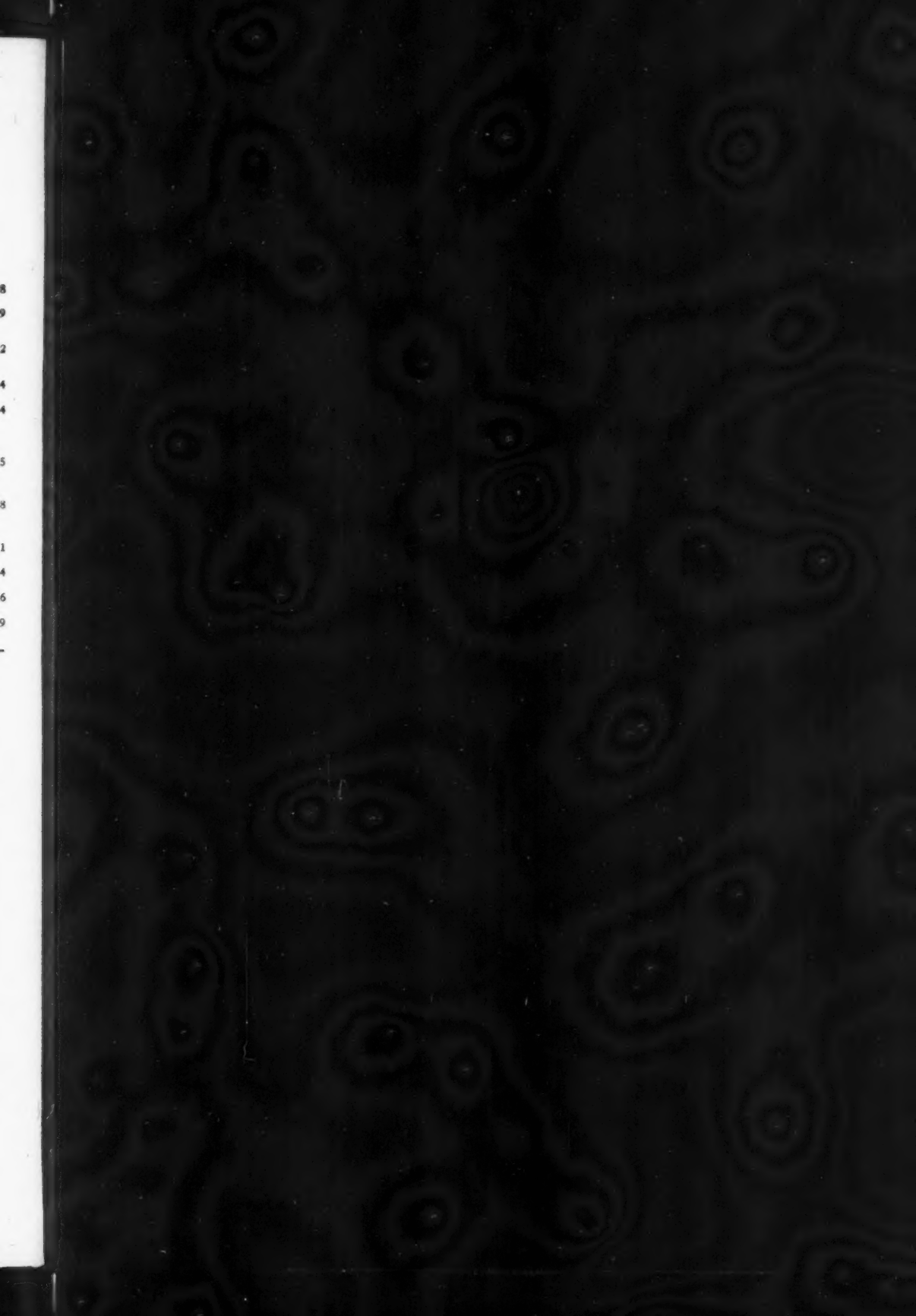

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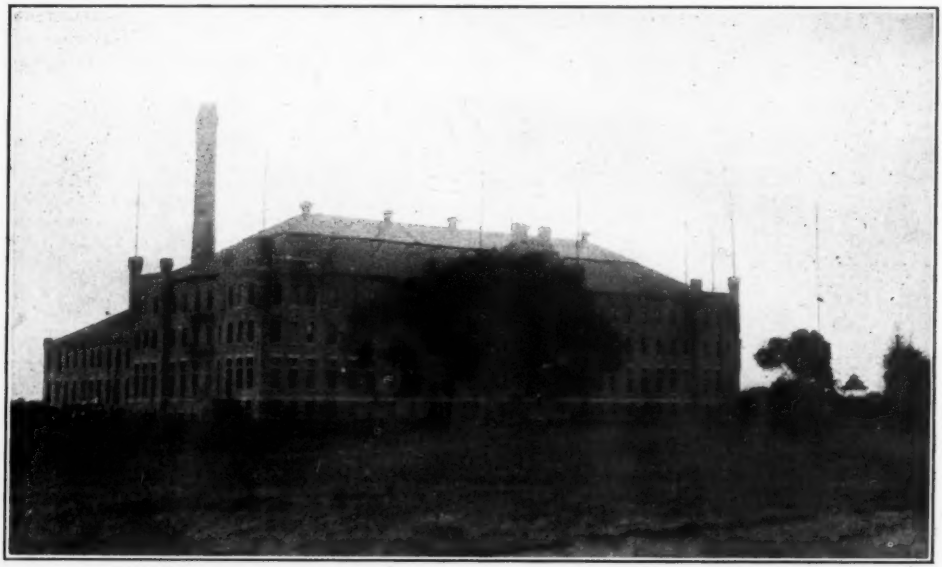

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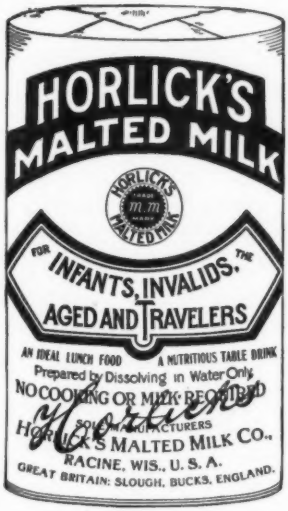
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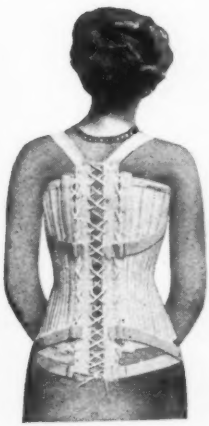

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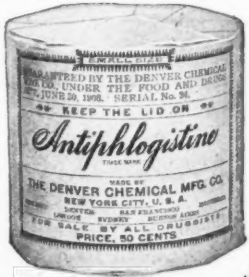
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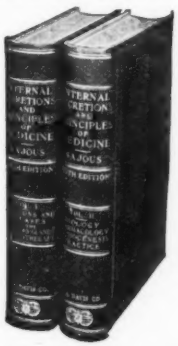

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VOL. XIV NEW YORK, N. Y., FEBRUARY, 1915 NO. 6

CHARACTERISTIC GAITS IN NERVOUS DISEASES*

J. IVAN DUFUR, D. O.
Philadelphia

The Gait in Health

THE perfect gait depends for its production on several factors. There must be normal segmental motion obtained through the spinal cord. There must be normal sensory impulses of muscle, joint, and tactile sense, transmitted through the sensory neurons to the cerebellum, there must be co-ordinated impulses of motion or movement on the part of the brain. These must occur practically simultaneously and an interference with the perfect action of any of these centers or with the conveyance of impulses over any of these channels will produce a defect of the gait. The centers which fail to act normally or the tract in which interference lies determine the character of the defect.

Insofar as the motor character of the act of walking is concerned it is voluntary. However, like any other voluntary act, it may in time and after frequent repetition, become automatic, after being initiated. Nevertheless it is still voluntary.

Walking involves a succession of movements by different joints, each movement being produced by the contraction of a different set of muscles. Each set of muscles has its motor center in the cerebral cortex, but they are so closely associated that the motor centers of the cortex govern acts rather than muscles. It is the act of lifting the leg, of swinging the extremity forward, of putting the foot down, rather than the mere contraction of the flexors and extensors that is produced by cortical activity. We must, therefore, think of the cortical motor areas of the lower extremity as containing a number of centers arranged in groups. It can not be divided into flexor and extensor centers since both actions are simultaneous in many acts.

The cortex by exciting the spinal neurons, and through them the muscles, produces a varied number of movements. The contraction of a single muscle gives motion, but not an act. The paralysis of a muscle impairs motion, but does not stop the act. The muscles are not called into action unless a cortical impulse reaches them. The cortical motor centers, therefore, differ from the action of the spinal neurons, which are the stockhouses of the memories of movements and are capable of reproducing those movements which they have acquired. Skill in any complex act is acquired only by many repetitions. A child learning to walk makes many, many vain attempts before it succeeds. These attempts are simultaneous acts in a number of centers and produce inco-ordinated movements. With each attempt, however, these movements are more or less subordinated, one to the other, and correlated in time, until order and accuracy are attained. By repeated performance this becomes the fixed combination of movement called the act of walking. This act becomes automatic in time and is as easy for the cortex as the motion producing harmony on the piano, or the violin, or the motion requiring the use of the typewriter, all of which are complex acts. (See Fig. 1—The Perfect Gait.)

The Gait in Disease

Hemiplegia—The impulse originating these acts pass from the cortical motor centers in the cerebrum in the motor tract through the internal capsule, where they lie posterior to all others; thence, through the middle third of the crus, through the pons, and then by way of the pyramids of the medulla to the crossed pyramidal tracts and direct anterior median columns of the spinal cord, and through these to the spino-

*A lecture given before the Osteopathic Society of the City of New York, January 16, 1915, illustrated with stereopticon.

muscular neurons. Paralysis is the result of a lesion to any portion of this tract, and if the lesion lie above the medulla the paralysis is one sided, a hemiplegia on the side opposite the lesion. Such a paralysis produces a characteristic gait. The entire side of the body seems to move together, the body being stiff. The shoulder falls toward the weaker side. The arm is carried in an adducted, flexed position with the wrist pronated and the fingers flexed. The leg is drawn forward with little bending of the knee or ankle; and it is swung forward in the arc of a circle with the ball of the foot and the inner side scraping the floor. Sometimes the foot is turned in and scraped along the floor on its outer side. The muscles are rigid and slow and stiff in motion and the power of finer movements is impaired. (See Fig. 2—Left Hemiplegia and Fig. 3—Right Hemiplegia.)

Spastic Gait—A lesion of the upper motor tract, when it occurs in the spinal cord, is usually transverse in character. It therefore results in a paralysis on both sides below the level of the lesion—a paraplegia. This paraplegia is accompanied by rigidity from tonic spasm. The gait is characteristic and is called the spastic gait. Such a condition is due to lesion in the latteral tracts of the spinal cord. The disease is called lateral sclerosis or spastic paraplegia. In walking the feet are not lifted from the ground, the toes are dragged and the shoe wears out on its inner surface and toe. The legs can not be abducted freely and the knees have a tendency to overlap. The patient shuffles along the ground with a short step but with an even gait. There is trepidation due to the increase of the reflexes and foot-clonus is noted at every step. Stiffness increases until the entire lower extremity appears to be moved as a mass without any motion of the ankles or knee joints and all efforts such as crossing the leg, kneeling or kicking become, first difficult, and finally, impossible. The patient rises from the chair or sits down slowly, there being an apparent resistance to the flexion and extension of the muscles. (See Fig. 4—Paraplegia.)

Poliomyelitis—The lower motor neurone has its origin in the anterior horn of the gray matter of the spinal cord. It performs the double function of originating motor impulses of muscular action in response to the sensory stimuli received from its corresponding segmental sensory neuron, and of receiving and conveying impulses of muscular action or movements or combinations of movements initiated in the higher motor neuron.

A lesion of the anterior horn of the gray matter of the spinal cord, to produce a distinctive gait, must affect those segments which lie in the lumbar enlargement. According to the number of segments involved a characteristic gait is produced. Paralysis more or less complete, and persistent once established, characterizes this lesion. Two types that affect the gait are particularly common. One type produces peroneal paralysis, sometimes including also the anterior tibial and even the posterior tibial group of muscles. Any one of these groups or all of them may be affected. This is called the leg type, and is marked by talipes, the character of the deformity depending upon which group of muscles is most affected. The other type is called the thigh type. In it the psoas and iliacus, or the glutei or the adductors of the thigh or the abductors or the extensors, or all of them combined are paralyzed. The leg hangs from the body and can not support any weight. The patient either walks with a crutch, swinging the useless extremity, or support is obtained by the use of a jointed brace. (See Fig. 5—Anterior Poliomyelitis.)

Ataxic Gait—In the foregoing discussion it has been shown how lesion of the brain or any portion of the motor neuron system produces a characteristic gait. And it was further shown that this gait is caused either by an inability on the part of the cerebral cortex to initiate the proper motor impulse or of the motor tract to convey such impulses.

Another type of defective gait is produced when the sensory neurons are involved. The function of this tract is to supply to the brain those sensory impulses by virtue of which the situation and move-

GAIT IN HEALTH AND DISEASE

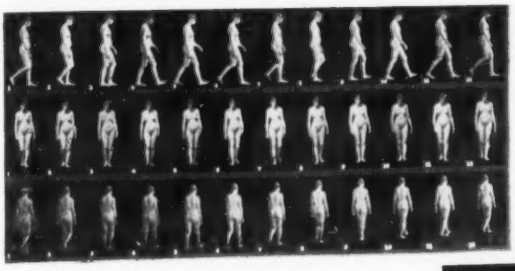

Fig. 1 Perfect Gait

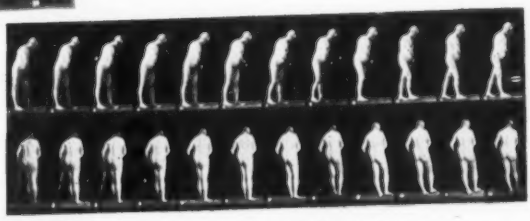

Fig. 2. Left Hemiplegia

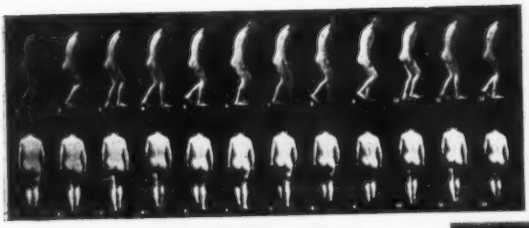

Fig. 3. Right Hemiplegia

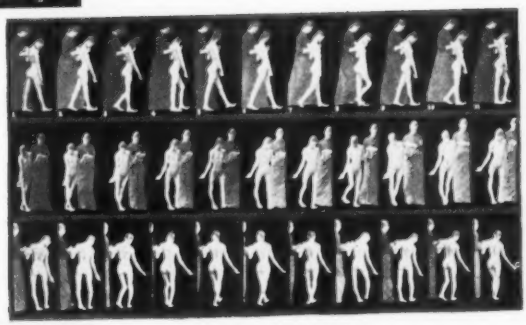

Fig. 4 Paraplegia

Fig. 5 Anterior Poliomyelitis

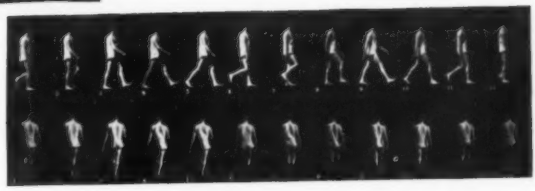

Fig. 6. Cerebellar Gait

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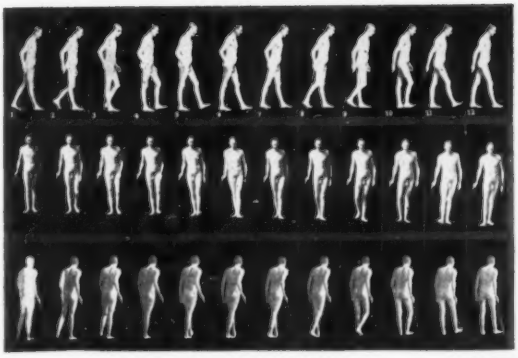

Fig. 7 Locomotor Ataxia

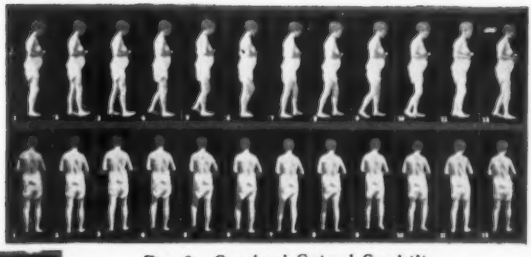

Fig 8 Cerebral Spinal Syphilis

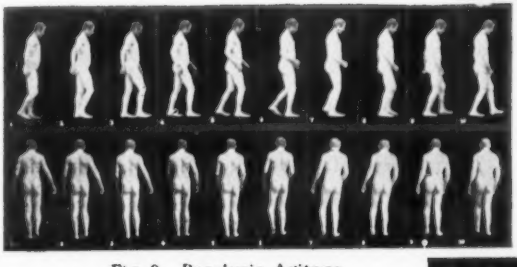

Fig. 9. Paralysis Agitans

Fig. 10. Idiot

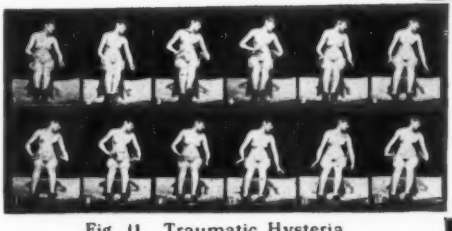

Fig. 11. Traumatic Hysteria

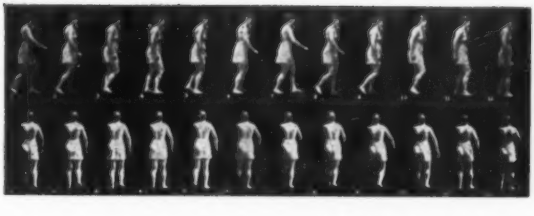

Fig. 12. Traumatic Hysteria

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ments of the limbs is appreciated and by which differences in weight and pressure are understood. The cerebral cortex originates motor impulses for co-ordinated movements in the act of walking, but it may only do so upon the proper reception of sensory impulses (from the skin, muscles, and joints) in the automatic centers whether these lie in the spinal cord, the medulla, the cerebellum or the cerebrum. The control of all co-ordinated movements involved in the act of walking and standing is the function of the cerebellum, as an automatic center. This control is only perfect when that organ is in condition to function perfectly and when the sensory impulses are transmitted to it properly.

A lesion of the cerebellum or a lesion of the sensory tract will produce a disturbance of the gait. This defect is characteristic in that it is marked by a loss of co-ordination in the muscular action. The gait becomes irregular or unmeasured in character, and is therefore termed, the ataxic gait.

Cerebellar Gait—When the lesion, which is most commonly a tumor, affects the cerebellum a condition is produced which is termed a cerebellar ataxia. The gait which results is called the cerebellar gait. It is a staggering gait with steps of irregular length and position, the body swaying from side to side like that of a drunken person. The ataxia of the legs and body is attended by a sense of vertigo which is usually relieved when the patient lies down. (See Fig. 6—The Cerebellar Gait.)

Locomotor Ataxia—When degeneration of the posterior columns of the spinal cord occurs, as in tabes dorsalis, it shuts off at their entrance to the spinal cord impulses directed to the gray matter of the cord, to the medulla by way of the columns of Goll and Burdach, to the lemniscus and the internal capsule. There is absent, therefore, knowledge as to the position of the legs, the degree of tension of the muscles and all of those facts which make for co-ordinate action and equilibrium. In posterior sclerosis, therefore, ataxia develops and a charistic gait is produced, dependent upon the degree of the sclerosis.

In the early stage there is awkwardness, which begins in the legs and develops gradually. The gait is unsteady and the patient sways and loses his balance. His feet are clumsy and he stumbles in quick moving or in climbing.

In the second stage we find the development of the typical gait of the disease. The length of the step is irregular; the feet are held far apart and the legs are thrown about. The feet are lifted high, thrown forward, and slammed down upon the floor, hence the name — *stamping gait*. The knees are bent backward and the ankles may turn. The patient leans forward unduly on rising and sways back and forth. He has difficulty in starting off, usually holding to some object or by using a cane. He watches the motions of his feet and uses his eyesight to maintin his balance. (See Fig. 7—Locomotor Ataxia.)

Syphilis of Nervous System—The gait in this disease is not pathognomonic, since the gait symptoms which arise will depend upon what region of the cerebro-spinal axis is involved.

A cerebral syphilitic endarteritis may produce the same apopletic symptoms as to gait that would occur with any other form of embolism or thrombosis, and therefore, a hemiplegia. In the cord the effect would be paraplegic.

If syphilitic exudations are present in the brain the same apoplectic gait that follows cerebral hemorrhage occurs. In the cord these exudations tend to produce a spastic paraplegia. In some cases this may be combined with sclerosis of the posterior columns. (See Fig. 8—Cerebro-spinal Syphilis.)

Paralysis Agitans—This disease develops a characteristic gait. It is particularly marked by slowness of action. The gait is at first stiff and slow. The stiffness of the neck and back inclines the body forward and the center of gravity is really in front. This hampers the balancing movements. The patient feels as if about to fall forward and hastens his steps almost to a run. Stopping is accomplished by seizing some object to keep him from falling. This is called propulsion or festination. Sometimes a tendency to step backward is noted (retropulsion), or a tendency

to fall to one side (latero-pulsion). Difficulty in balancing sometimes makes starting to walk difficult. Then the patient must be swayed back and forth and given a shove. The location of the lesion has never been accurately determined. The fact that all of the symptoms are comparable to those produced on the approach of old age has caused many writers to describe the pathology as that of the senility. (See Fig. 9—Paralysis Agitans.)

Idiocy—Maldevelopment of the brain produces several clinical types of disease which may be classified under three headings:

(1) That which affects the cerebral motor tracts;

(2) That which affects the sensory motor centers;

(3) That which affects the mental processes.

The pathological condition amounts to one of cerebral atrophy and is in fact one of sclerotic atrophy. The locality of the lesion is responsible for the symptoms. The first named type is the only one in which material defect of the gait is noted. Cerebral atrophy which produces diseases of this type is marked by spastic paralysis, which may be hemiplegic or double (when it is called diplegia).

In the hemiplegia of idiocy the leg is weak, and the knee and ankle are held rigid. The child limps when walking.

In other cases attempts at voluntary movement inaugurates involuntary slow movements on the affected side (*athetosis*) which prevent the intended movement; or the affected side is thrown into a state of rigid immobility (spastic rigidity).

In diplegia, Little's Disease, the adduction and inward rotation of the thighs cause overlapping of the knees (as in the usual type of lateral spinal sclerosis). A pointing of the toes becomes a fixed equino-varus, so that the heels can not touch the ground. The child can not stand alone, but a spastic gait is permissible if it be supported under the arms or held up by the hands. In some of these cases improvement occurs as the child advances in age to the degree that walking is possible with the patient using the hands or a cane for support. Athetosis is also present in this form of paralysis. (See Fig. 10—Gait of Idiocy.)

Combined Sclerosis and Freiderich's Ataxia—In this disease the lesion affects the posterior columns and the lateral columns of the cord in a sclerotic process from which the disease obtains its name. The symptoms, therefore, are the combined symptoms of locomotor ataxia and spastic paraplegia.

There is heaviness of the legs, stiffness of the muscles, unsteadiness of the gait. The unsteadiness is worse in the dark and gradually the gait becomes distinctly unmeasured; but it is combined with the marked stiffness seen in lateral sclerosis. The feet are not lifted high, as in tabes, but are dragged; and there is ankle clonus. As the case develops the spastic element overshadows the ataxic, and the case gradually becomes typically spastic paraplegia.

Multiple Sclerosis—In this disease small plaques or islets of sclerotic tissue are scattered irregularly throughout the central nervous system.

The gait, therefore, which is pathognomonic only when considered in conjunction with other diagnostic symptoms, may be spastic, ataxic or cerebellar. There is usually at least weakness, stiffness and paralysis. The gait is usually spastic, the feet being drawn across the floor, overlapping, and the legs stiff and adducted. Sometimes the gait is staggering, sometimes it is slightly ataxic. Vacillation (irregular contractions of the muscles of the trunk), causes swaying of the body in walking. At the same time intentional tremor is manifested by the jerky irregular action of the hands.

Hysteria—In hysteria paralysis is not uncommon. It may occur as a hemiplegia, a paraplegia, or a monoplegia. The affected muscles are usually relaxed, but they may be contractured. The leg is dragged in an attempt at walking or the knee may refuse to give any support. The patient supports the affected side with a crutch and seems incapable of making any effort to use the paralyzed part. (See Figs. 11 and 12—Traumatic Hysteria.)

PENNSYLVANIA BUILDING.

OSTEOPATHIC ADJUSTMENT

A Therapeutic and Prophylactic System of Treatment

ORREN E. SMITH, D. O.,
Indianapolis

Structure Determines Function

THIS is the osteopathic concept of life. It is a law of cause and effect. It is the determining factor in establishing the great fundamental principles which underlie and govern all vital phenomena. That there are other minor contributing factors which enter into the problem of health and disease, we do not question; but that the greatest factor of all is the relation of structure and function is fast being proven by all science relating to the healing art. It is a biologic law, and therefore, it underlies the expression of all vital phenomena and is universal in its application.

Structure antedates all functions. It is utterly impossible to have function, either normal or abnormal, without a physical mechanism to give expression to such phenomena. The heart, the lungs, the kidneys, and all other organs must exist physically before there is any possibility of functional expression. It is evident that function can not exist without structure, and that structure is necessary to the expression of all vital phenomena; therefore, we say structure determines function.

In the very beginning of life, we see the principle demonstrated in the cell-differentiation process. The first cells formed in embryonic life are all alike, but as cell-division continues, when increase in the number of cells has become sufficient to justify the formation of organic parts, these cells begin to differ from one another in structure, according to the function they are to perform. Some are destined to become nerve-cells, some connecting-cells, some epithelial-cells, and some muscle-cells, each type constructed, physically, for the work nature intends it to do.

This specialization in structure for a specific purpose is seen in bone-tissue which forms the skeleton of man supporting the other structures of the body and resisting the force of gravity; in muscle-tissue, which is capable of contraction and relaxation, producing motion in the body; in epithelial-tissue, forming glands for secretion and excretion; in nerve- tissue composed of long wire-like fibrous tissue, for transmission of nerve-impulses, etc.

Finally, the organic parts themselves are specialized in structure to more perfectly perform the functions for which they were intended. The vascular system consists of hollow tubing for the circulation of fluids; the kidneys are constructed to excrete waste from the blood; the auditory apparatus is adapted in structure for interpretation of sound; the lungs are constructed for exchange of gases; the heart for pumping the blood stream; the spinal cord and brain for the reception of impressions from both within and without the body, and for directing such impressions for the regulation of the organism. Each organ is constructed physically for performing a specific function. The differentiation process of structure, for a specific function, is seen first in the cell or histological structure, then later in the organ or anatomical part. The adaptation of structure to function in the organism is a result not of chance but of law, and this law may be utilized by the physician in the healing art if he gives it proper interpretation.

This law of structural relation to functional purpose is seen again working out in its application to youth and old age. This transition in function follows closely on the changes in structure. Evidently, *change in structure* produces *change in function.*

Charles S. Minot, of the Harvard Medical School, has made some very interesting investigations of the relation of structure to function in his studies of old age. He says:

> We know, first of all from our common observation, that the very old grow shorter in stature. We see that they are not so tall as in the prime of life. * * * In youth many parts of the skeleton are soft and flexible, like the gristles and cartilages which join the ribs to the breastbone, but in the old man these are largely replaced by bone. Bone represents an advance in organization, in structure, as we say, over the cartilage. The old man has in that respect progressed beyond the youthful stage; but that progress represents not a favorable change; the alteration in structure from elastic cartilages

to rigid bone is psysiologically disadvantageous, so that though the man has progressed in the organization of anatomy of his body, he has really thereby rather lost than gained ground. * * * If we examine the muscles we see that they have become less in volume, and when we apply the microscope to them we see that the single fibres on which the strength of the muscles depends have become smaller in size and fewer in number. * * *

This same phenomenon of atrophy shows itself in the digestive organs. Those minute structures in the wall of the stomach by which its digestive juice is produced, undergo a partial atrophy, in consequence of which they are less able to act; they are not so well organized, therefore not so efficient as in earlier stages. * * * The lungs become stiffened; the walls which divide off an air cavity from the neighboring air cavities do not remain so thin as in youth, but become thickened and hardened, and the vital capacity of the lungs, that is to say the capacity of the lungs to take in and hold air, is by so much lessened. * * *

The heart—it seems curious at first—is in the old always enlarged; but this does not represent a gain in real power. On the contrary, if we study carefully this condition of the circulation of the blood in the old, we find that the walls of the large blood-vessels which carry the blood from the heart and distribute it over all parts of the body—vessels which we call arteries—have lost the elastic quality which is proper to them and by which they respond favorably to the pumping action of the heart. Instead they have become hard and stiff. We call this by a Greek term for hardening, sclerosis, and arterial sclerosis is one of the most marked and striking characteristics of old persons. Now when the arteries become thus hardened, it requires a greater force and greater effort of the heart to drive the blood through them, and in response to this new necessity, the heart becomes enlarged in an effort of the organism to adapt itself to the new unfavorable condition of the circulation established by age. But the power of the heart becomes inferior along with the hypertrophy or enlargement of the organ and we see that in the old, in order to make up for the feebleness of the enlarged heart, it beats more frequently. In other words, the pulse rate in the old person increases. * * *

It has been discovered by careful examination of persons of similar size that the brain begins relatively early to diminish in weight. Thus in persons of a height of 175 centimeters, and over, of the male sex, it is found that in the period from twenty to forty years the brain weight is 1,409 grams. But from forty-one to seventy years it has shrunk to 1,363, and in persons of from seventy-one to ninety it has shrunk to 1,330. * * *

Now if we consider all these changes in the most general manner, we perceive that they are clearly of one general character; they imply an alteration in the anatomical condition of the parts; but it is an alteration which does not differ fundamentally in kind from the alterations which have gone on before, but it does differ in the extent and in part in the degree to which these alterations have taken place. When the elastic cartilaginous rib becomes bony, nothing different is happening from that which happened before, for there was a stage of development when the entire rib consisted of cartilage, and in the progress of development toward the adult condition that cartilage was changed gradually into bone, thus producing the characteristic, normal, efficient bony rib of the adult. When old age intervenes, the change of the cartilage into bone goes yet farther, but it progresses in such a way that it is no longer favorable, but unfavorable.

We have then in this case a clear illustration of a principle of change in the very old which is, I take it, perhaps sufficiently well expressed by saying that the change which is natural in the younger stage is in the old carried to excess. * * * At first, structure comes as a helpful thing, increasing the usefulness of the part, and then it goes on too far and impairs its usefulness, and at last a stage is produced in which no use is possible any longer—the thing is worthless.—*Minot.*

What a striking illustration this picture of old age sketches for us of the relation between structure and function. Youth and old age differ in function, because they differ in structure. The functional reactions of man are modified, between youth and old age, by natural biologic laws of growth and development which *change the structure* of the organism. We do not expect the same perfect functional reaction in the old man that we do in the child, because we know that his body-structure has undergone considerable change since youth, and for this reason his functional powers are inferior to that of the child. While this change in structure from youth to old age is one of growth and development, the fact can not be ignored that the progression leads first to maturity, later to retrogression, and ultimately to death.

Change in structure, then, is the great basic cause of change in function. If structure conforms to the normal standard of composition, size, and position, of the organism, then function will be normal; but, if structure deviates from this normal standard, aberration in function will follow. The application of this principle to disease

is quite as scientific and reliable, as it is to senescence, and is amply substantiated by pathology and symptomatology which accompany all diseases.

Since the discovery of the microscope, its use in viewing diseased tissues of the body has revealed a striking amount of structural abnormality in the cells which compose the body tissue. Such changes in structure are known as pathology, and are accompanied by varying degrees of symptomatology. Pathology divides itself naturally into two parts; (1) *histological* and (2) *anatomical*. Histological pathology has been further divided by pathologists into two divisions, (a) *progressive*, and (b) *retrogressive*.

Progressive pathology includes such changes in the cell-structure as simple and compensatory hypertrophies; direct and indirect cell-division; regeneration of special tissues, such as connective, muscular, epithilial and nervous. *Retrogressive* pathology includes atrophy; pigmentation; necrosis; infiltrations, such as fatty, serous, calcareous, etc.; and degeneration, such as amyloid, mucous, fatty and colloid.

Histological pathology is microscopic and has been revealed to man by use of the microscope. In histological pathology the individual cell, of which all anatomical parts of the body are composed, is here brought to view, and can be studied in all its structural derangement as found in diseases of the body.

Anatomical pathology is microscopic and may be recognized by the unaided eye, and by the sense of touch. Such pathology includes whole parts of anatomy rather than single cells, and notes the relation of different parts of anatomy to each other, and to the whole. Anatomical pathology is inter-organic, rather than intra-organic, and has to do with the assembling and co-operation of all parts of the organism, rather than a single part.

Anatomical pathology includes adhesions; vertebral rotations; tumors; muscular contractures and atrophies; joint subluxations, such as innominatal, vertebral and costal; spinal curvatures; erosions of intervertebral cartilaginous discs; fractures; dislocations; visceroptoses, etc.

The study of pathology, both histological and anatomical, in its relation to symptomatology, embraces a wide field of investigation. Change in structure ranges from the most minute microscopic variations to the most extensive and obvious physical defects. All forms of pathology are present in countless stages of development, and accompanying these structural changes are variations in function from the most chronic and scarcely perceptible to the most violently acute and appalling symptoms found in all diseases.

The specialization of tissue in the body for the performance of a specific function, creates a specific symptomatology from these structures, when they become pathological. There are four or five elementary specialized tissues in the body and from these four or five elementary tissues all the organic parts of the body are constructed. Symptomatology will vary, then, according to the pathology of the elementary tissues composing the organic part, and also according to the organic part itself as a whole. Symptomatology follows structural abnormality very closely, hence a very careful examination of the structure of the body is essential to an intelligent and accurate diagnosis of disease.

Pathologists have sought to solve the problem of disease by the use of the microscope, and the evidence they have collected along this line is very useful so far as it goes. But, unfortunately, the patient has to die before this sort of evidence becomes available.

Within recent years, however, this line of investigation—the relation of structure to function—has been under careful consideration and has been carried forward until not only histological, but anatomical pathology, is being cited as very closely related to symptomatology.

When it is shown conclusively, as is being done by laboratory experimentation, that gross anatomical lesions of the spinal column create disturbances in function of the visceral organs, and that such structural deviations are the cause of symptoma-

tology, then such evidence becomes at once eminently practical, in that not only this anatomical pathology may be detected prior to death, but that such anatomical pathology may be eliminated by normalizing this structure, and by so doing, obliterate all symptomatology.

As a matter of fact, histological and anatomical pathology are found lying side by side in practically all diseases and represent different stages of development in the same diseases. Pathology undergoes a maturation process, and this maturation process may proceed from the histological to the anatomical, by slow stages of development involving an ever greater number of tissue cells, which eventually produce the well defined anatomical lesion.

On the other hand, the maturation process may proceed from the anatomical to the histological lesion. By laboratory experimentation it has been shown that anatomical lesions may be produced artificially in the spinal column of animals, which in time create extensive histological lesions in the visceral organs of the animal so lesioned. Furthermore, the organic parts showing these histological lesions, correspond to the segment of the spinal cord lesioned, from which the viscus receives its nerve supply.

Anatomical spinal lesions which disturb the nerve supply to the visceral organs become the causative factors in creating histological lesions in these visceral organs: Lesions which disturb the nerve supply to the stomach will in time modify the cellular structure of the stomach to such an extent that gastric digestion will become impaired; lesions which disturb the nerve supply to the pancreatic gland may so modify the cells composing that gland as to impair its metabolism, and produce diabetes; lesions which disturb the nerve supply to the kidneys may so alter the structural integrity of the kidneys as to cause albuminuria, etc.

Anatomical and histological pathology are intimately and inseparably related in their association with disease and stand out clearly as the great causes of aberration in function. Evidence of change in structure, producing change in function, in old age and disease, is ample to convince any well informed and unprejudiced person that such reaction springs from a biologic law which is fundamental to all health and disease, and must be taken into account in dealing intelligently and scientifically with all diseases of the human family.

Normalization of Structure becomes the great therapeutic law in abolishing symptomatology. Upon this basic principle or law of the organism, are dependent all minor details of vital regulation, because structure antedates, and gives expression to, all function. The primacy of structural being, over functional expression, makes this law of structural adjustment applicable to all parts of the organism for the elimination of disease. Normalization of structure is, therefore, the first step toward the elimination of symptomatology, whether the disease be gastritis, pneumonia, neuritis, measles, rheumatism, or some other disease.

There can be no more scientific treatment for disease than the removal of its cause. In all diseases treated, whether acute or chronic, pathology is present without an exception, which is the great primal cause of aberration in function. Symptoms have their rise in perverted structure. It is in pathology that physiology changes to symptomatology. Pathology must, therefore, be removed before symptomatology will subside. This is the principle underlying surgical operations, and it is the principle upon which osteopathic therapeutics is founded.

Normalization of structure by osteopathic adjustment proceeds along well defined lines of biologic law. Adjustment of the organism is constantly maintained by nature to insure health. This is most noticeable in the well regulated functions of the body, such as respiration, circulation, secretion, excretion, nutrition, growth and all other physiological processes of the organism. The even regularity of functional action in the body is an adjustment process required to create and preserve those fundamental qualities of protoplasm, such as irritability, metabolism, nutrition, growth and reproduction, upon which all life depends. There is not a single functional process in the

human organism that does not require, and receive, constant adjustment and regulation.

This regulation of function in the organism is produced by adjustment of structure. All functional processes carried on in the body are dependent upon physical matter for their expression. We can not breathe without lungs; the blood can not circulate without muscular contraction of the heart muscles; sight is impossible without eyes; cerebration requires a brain and nervous system—all vital phenomena require a phyiscal basis for their expression. If, therefore, the expression of function is dependent upon physical structure for its expression, the *degree* of *structural perfection* will determine the degree of *functional* perfection. The body must be normalized, structurally, to produce a perfect expression of function.

Nature has made provision for the normalization of structure of the body by regeneration of the cellular tissues composing it. Not all tissues, however, may be regenerated; only those less highly specialized are reproduced completely. Delafield and Prudden quote Bizzozero as making three classifications of cell regeneration:

First, tissues whose cells are capable of multiplication throughout the life of the individual or for a considerable period after maturity, and so lead to a continual regeneration. These are tissues whose cells are liable and evanescent. In the class are parenchyma cells of those glands or structures which produce formed elements, such as the spleen, lymph-nodes, bone-marrow, ovary, testicle; also the epithelium of the skin with its hair follicles and sebaceous glands and of the mucous membranes of the respiratory, digestive, and genito-urinary organs.

Second, tissues whose elements increase by division up to the time of birth, or sometimes for a short period thereafter, when evidence of physiological regeneration ceases. These are tissues with permanent cells. In this class are the parenchyma cells of those glands which secrete fluid material, such as the liver, kidneys, pancreas, salivary glands, etc. Also members of the connective-tissue group, fibrous tissue, cartilage and bone, and the smooth muscle fibers.

Third, striated muscle and nerve tissue. Here physiological regeneration does not occur.

Commenting further upon the power of the tissues to normalize the structure of the body, these authors say:

It should be borne in mind, in studying the regeneration of various kinds of cells and tissues, that the acquirement by certain cells of special functional powers as the result of the physiological division of labor, has involved the impairment of some of their more primitive general capacities, among them that of reproduction. Thus it is that we find in the ganglion cells an almost total lack of reproductive capacity; while in many of the gland cells this is slight, in others considerable. In some of the less highly differentiated cells of the body, on the other hand, as in certain forms of epithelium, in blood cells and in the cells of the connective tissue, this primitive capacity of protoplasm to form new similar cells by division is maintained and may be evoked by the changed conditions which injury or loss involves.

* * * * *

After destructive injury or loss, a full and complete replacement of cells and tissues can occur only as the result of a proliferation of cells of the same type as those to be restored. Thus a regeneration of epithelium occurs by proliferation and growth of the epithelial cells alone; regeneration of muscle by muscle cells, etc. In fact, however, in the higher types of tissue, after considerable injuries with loss of substance or after destructive pathological processes, complete regeneration is not common. This, as we have seen, is because the highly specialized cells of the body are limited in their capacity for reproduction closely to the domain of physiological regeneration. What we ordinarily call healing in extensive wounds of the more highly specialized tissues is usually a provisional makeshift repair by means of new-formed connective tissue.

We have seen that the regenerative capacity in the cells of the human body is most marked in the less highly differentiated types of cells, and that it is above all the connective tissue, blood-vessels, and epithelium which most frequently and most completely undergo regeneration. These are relatively lowly organized tissues and serve for the maintenance or protection of more highly specialized tissues, and with them regeneration may be complete with full resoration of function. But although the more highly organized tissues in man do not undergo after injury any considerable regeneration, they are, when uninjured, capable, under the stimulus of increased functional exercise, of compensatory hypertrophy, so that the loss to the organism of similar tissue may be made good. A common example of this is the structural hypertrophy and increased performance of one kidney after the removal of the other.

The physiological regeneration of the structure of the body, maintained by nature for the regulation and restoration of function in the organism, is an unanswerable argument in favor of osteopathic adjust-

(Continued to later page)

NON-SURGICAL TREATMENT OF APPENDICITIS

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Toronto

(Continued from the December Number)

TO treat any bodily condition intelligently a thorough understanding of the innervation and vascularization of the region disturbed is necessary.

In Figs. I. and II. (December Journal) we showed the vessels and plexuses of nerves in the region of the appendix. In Figs. III. and IV. illustrating this article we are showing the nerve plexuses and ganglia which control the action of the walls of the intestines.

The bowels are automatically controlled, just as the stomach is, independent, so to speak, and yet regulated to a certain degree by extrinsic nerves. Psychical phases also have their influence on bowel movements under certain conditions.

Autonomic Nerves—The autonomic arrangement of the nerves to the intestines differs in some respects from that found in other organs. The passing of preganglionic fibres from segments of the spinal cord by way of the anterior roots and ventral divisions to and through sympathetic ganglia and ending in the cœliac plexus and ganglia, is peculiar to this region. (Fig. IV.)

The cœliac plexus with its network of fibers containing large and small ganglia is made up from the splanchnic nerves and the pneumogastric (right in particular). Branches from the upper lumbar sympathetic ganglia also enter to assist in the formation of the superior mesenteric plexus and ganglion.

This region of the cord gives off white rami (Fig. IV.) connecting the two nerve tracts and conveying not only visceral fibres but vaso-motor fibres as well. From the cœliac plexus, the greatest of the prevertebral plexuses, the intestinal walls receive their controlling impulses.

In the sacral region the visceral branches pass directly to the pelvic plexus without going through the sympathetic ganglia. The inferior mesenteric plexus branches out from the aortic plexus and follows the artery bearing that name, and supplies the descending colon and pelvic colon. The middle hæmorrhoidal plexus from the hypogastric supplies the remaining portion of the tract.

Peristaltic Action—The peristaltic action of the intestines depends upon its intrinsic regulation, although dependent on the central nervous system. From the vagus, motor impulses are received, and from the sympathetic inhibitory fibres. The sympathetic fibres come from the cord, pass to the semilunar plexus as preganglionic fibres, and from these ganglia as postganglionic fibres in the mesenteric plexuses.

The lowest part of the colon is innervated by way of the anterior roots of the lumbar cord and sympathetic to the inferior mesenteric ganglia as pregangliated fibres, then following the inferior mesenteric plexus and hypogastric to the bowel wall.

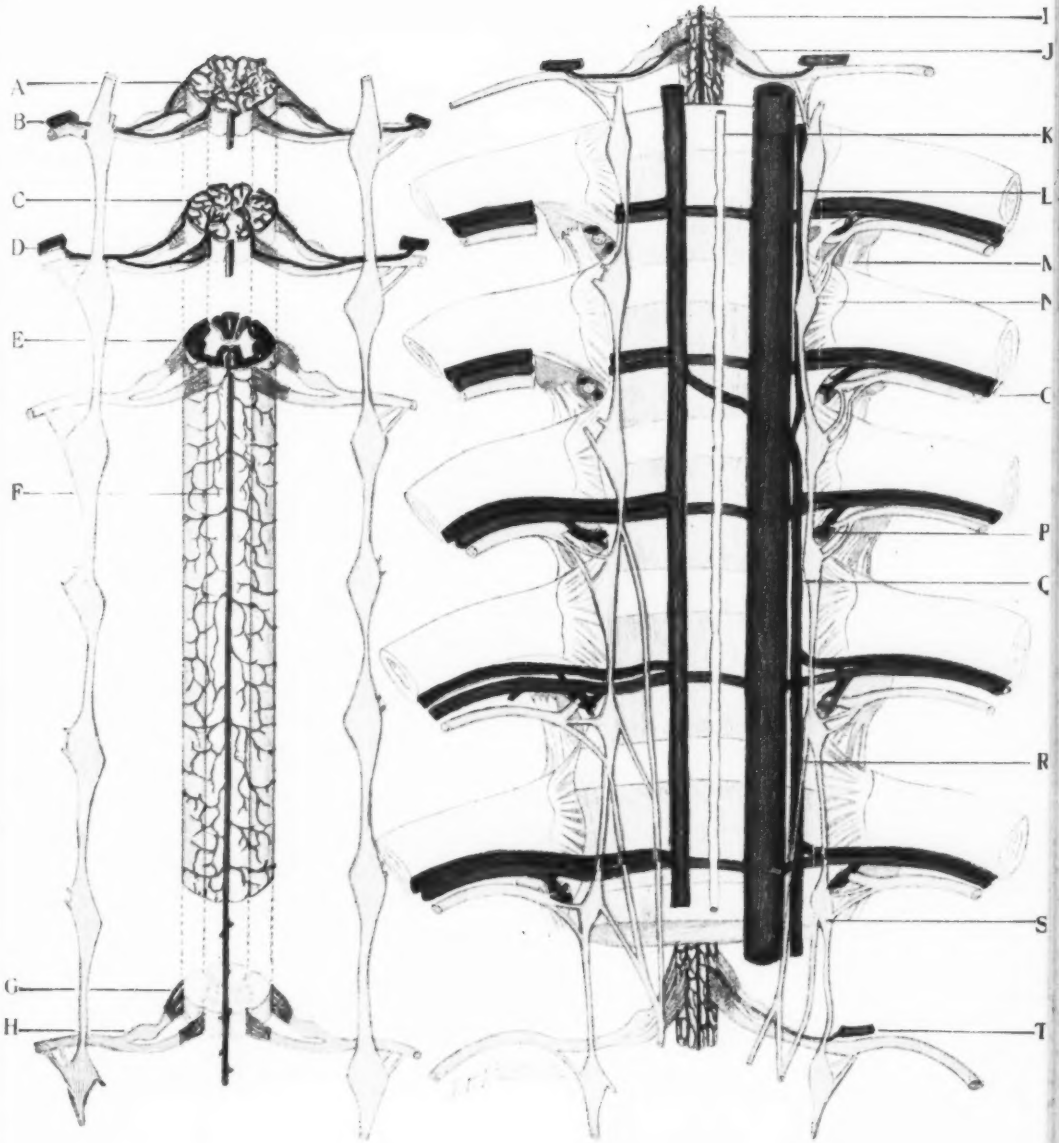
Through the nervi erigentes (2-4 sacral) inhibitory and motor fibres pass by way of the hypogastric plexus.

Vaso Motor Fibres—The vaso-motor fibres to the intestines except to the lower part of the colon follow the same course from the lower thoracic and upper lumbar segments of the cord through the sympathetic ganglia and splanchnics to the cœliac ganglion. There they follow the mesenteric plexuses to all parts of the intestines supplied by the superior mesenteric artery (Fig. I.).

Reflexes—Retained particles in the appendix may stimulate the nerves to the extent of producing spasms or colic. The effect on the muscular coat may be transmitted to the colon. The sympathetic fibres of the appendix convey the stimulus to the cord segment in the region of the lower thoracic. If this stimulation persists, the segment affected as well as adjacent segments may become overstimulated to the extent of increasing the impulses in the efferent motor and sensory tracts.

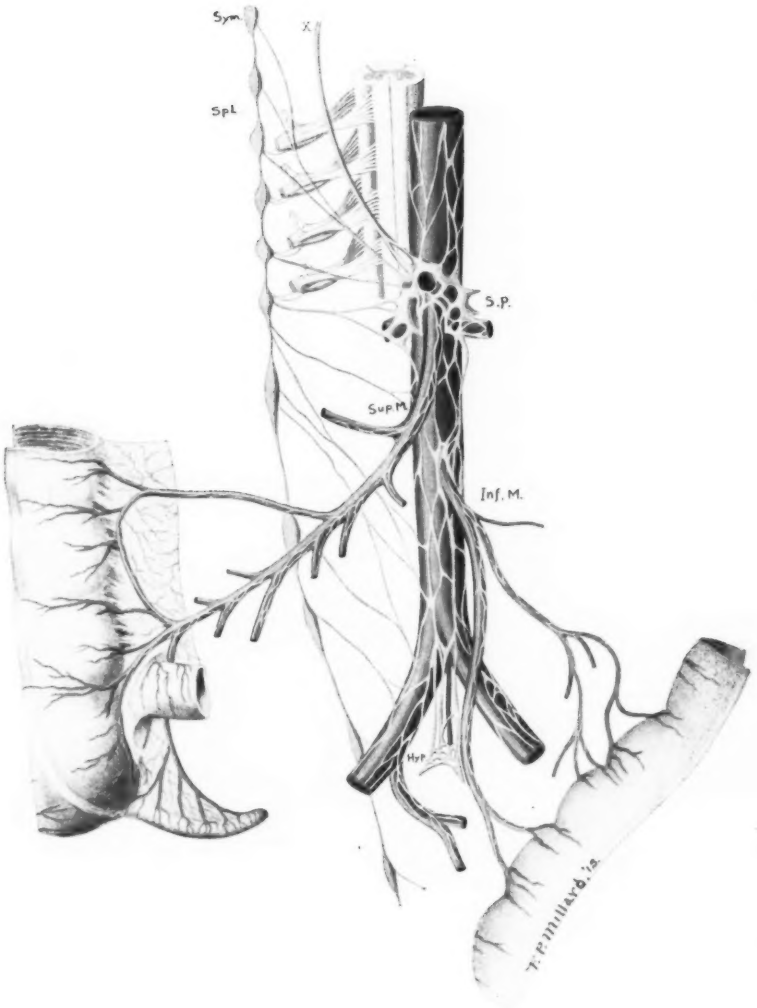
Peripheral disturbances corresponding with the distribution of the nerves produce pain and muscle contraction—viscerosen-

Illustrated lecture given at the Chicago College of Osteopathy, Dec. 23, 1914.



VASCULARIZATION OF THE CORD.

FIG. III. (F. P. Millard.) A, arterial anastomosis; B, intercostal artery, C, venous anastomosis; D, intercostal vein; E, spinal cord; F, antero-median artery; G, post. root; H, ganglion on post, root; I, spinal cord; J, ganglion on post. root; K, thoracic duct; L, vena azygos minor superior; M, superior costo transverse ligament; N, stellate ligament; O, intercostal vein, artery and nerve; P, rami communicantes; Q, vena azygos minor inferior; R, great splanchnic; S, lateral ganglia; T, intercostal artery. *(by courtesy of "Deason's Physiology.")*



INNERVATION OF THE APPENDIX AND INTESTINES.

FIG. IV. (F. P. Millard.) SYM, sympathetic chain; X, right pneumogastric entering the coeliac plexus; SPL, splanchnic nerves conveying preganglionic fibres from cord via anterior roots and white rami through the sym. gang. to end in the coeliac plexus and ganglia; S.P., solar plexus; SUP. M, superior mesenteric plexus, containing post-ganglionic fibres, enveloping the artery and its branches. These nerve fibres end in the microscopic plexuses of Auerbach and Meissner in the walls of the appendix and intestines; INF. M, Inferior mesenteric plexus following the course of the artery to supply the lower part of the colon with branches from the Hypogastric plexus, HYP.

sory and motor reflexes. This we find in most cases of appendicitis.

The normal afferent impulses to the cord are increased in congestion of the appendix resulting in additional impulses over the efferent nerves going to the muscles, vessels, sensory areas, etc. The cord segments receiving and transmitting increased numbers of impulses become irritated and hypersensitive. On palpation of this region of the spinal column we usually find an area of sensitiveness. The reflex-symptoms are the result of overstimulated cord segments.

Lesions—We have shown the effect on the cord of stimulation through a congested appendix. We now turn to a phase in which these same segments have become disturbed primarily through a specific lesion. In Fig. III. we have shown the vascularization of the cord segments.

A lesion in the region of the lowest thoracic or upper lumbar may interfere with the blood supply of the corresponding cord segments to the extent of rendering the cells excitable so that visceral and vaso-motor disturbances are produced in the nerves connected with these centers. Clinically, we find the abating of inflammation in the appendix following the correction of the lesion referred to, by way of the splanchnics.

In considering a lesioned area in the splanchnic region, let us remember that normally the mechanism of a cord segment works from a reflex standpoint. Constant afferent impulses from the viscera pass from cell to cell in the cord stimulating and giving tone to the various efferent areas.

To reduce peristalsis to the normal condition and thus regulate the reflex action is one object of correcting lesions in this area. Thus, the lesion will allow afferent impulses to overstimulate the cord segment resulting in increased stimulation of the motor and sensory nerves producing muscular contraction and pain in the peripheral nerves, coming from the irritable segment.

The futility of treating the peripheral or terminal area is obvious. Correction of the specific lesioned area is of primary importance. If, however, the total disturbance comes from the viscera causing additional stimulus to the afferent nerves, and reflexly overstimulating the efferent area we must treat the inhibitory areas to reach the sympathetics, thus reducing the peristalsis and quieting the afferent impulses.

The sympathetic fibres to the appendix as well as the motor and sensory fibres to the region of the right iliac fossa arise from the region of the lowest thoracic and upper lumbar (Figs. III. and IV.). Reduction of pain and relaxation of muscle tension in this region (iliac fossa) will depend on treatment applied to the section from which the cord segments control the reflex actions. One segment alone is seldom involved. The stimulation passes along to adjacent segments of the cord affecting additional nerve fibres.

The bowels are insensitive, but cause pain when disturbed through stimulating the cord segments containing efferent fibres passing to peripheral areas. Symptoms arising from appendicitis are purely reflex and vary in individual cases. The phenomena of pain confined to one side in these cases corresponds with that observed in biliary and renal colic as well as cardiac troubles.

To control the vagus with its viscero-motor effect on the small and large intestine we will of necessity need to free this nerve from any undue disturbance. The correction of cervical lesions are important in that the vagus communicates with the superior cervical ganglion.

(To be concluded.)

12 Richmond St.

THE ENEMA

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THERE seems to be a lack of information among both the profession and laity as to what constitutes an efficient enema, as well as the best manner of giving it. I shall, therefore, give herewith the conclusions drawn from my experience with this very valuable agent. It is not my purpose at this time to consider nutritive enemata, but to confine my remarks to enemata, whose object is to empty the lower bowel.

There has been too much carelessness on the part of the physician in instructing the patient or practical nurse and much ignor-

ance on the part of these to whom the work is intrusted. It is in the hope of doing away with some of this carelessness and ignorance that I submit this brief article on a very important subject.

To tell a patient to take an injection is not sufficient, but a few minutes careful instruction will insure a much better result and at the same time will inspire the patient with the fact that you are properly interested in his or her welfare, and further, that you are alert and intelligent in your consideration of the case. To most people, taking an injection means to sit on a commode with a fountain syringe, full of water, hung six feet above them, and to let the water run into the rectum until the pain is practically unbearable and then to let the water come away. This is the worst imitation of a proper enema, and does very little good.

The following is a description of one of the most valuable enemas and I will give the technic in detail, as it applies to all enemas in this class. The patient should have all clothing loosened and be placed in a horizontal position, (the dorsal decubitus with a cushion under the hips). A two-quart fountain syringe, with a cut-off on the tube, should be filled with warm soft water, which has been made as soapy as possible with good soap, such as castile or ivory. The temperature should be 99 degrees F. or about blood heat. The syringe should be hung three feet above the level of the patient. The rectal tip should now be lubricated and inserted with care. Keep in mind that the line of the anal outlet points to the patient's umbilicus and by holding the tip gently but firmly against the sphincter for a minute sufficient relaxation will occur to allow entrance without force or pain.

Right here let me suggest that the rectal tip, such as usually accompanies the fountain syringe, is just as useful as a colon tube in every way. Exhaustive experiments have shown that no flexible colon tube, whether metal or rubber, gets above the rectal pouch. The way to give a "high enema" is to have the patient in the proper position and take plenty of time. Now the cut-off on the tube should be opened and water allowed to enter the bowel until the first evidence of pain or discomfort, when the cut-off should be closed, and wait until perfect comfort ensues. It is not to be considered whether an ounce or a pint has been received, but one is governed entirely by the feelings of the patient. Then more water is allowed to enter, each time shutting it off promptly at the first sign of discomfort. This should be continued until the two quarts is used (for an adult).

It should require from fifteen to thirty minutes to take such an enema and it should be retained for another fifteen minutes, if possible. One may manipulate the bowel in the left iliac fossa and along the course of the descending colon with benefit. If the entire manoeuver has been carried out with gentleness and deliberation, there may not be much tendency for the bowel contents and soap solution to come away, and in this event a small cupful of cold water, poured into the now empty syringe and allowed to run into the bowel, will start peristalsis and a good result will be secured.

Normal salt solution (heaping teaspoon salt to the quart of water) may be used alternately or to replace the soap solution.

One ounce glycerine in two quarts water makes a good enema in very obstinate cases of constipation. A very effective enema is made by dissolving fifteen to twenty-five drops of turpentine in two quarts of water. It should be remembered, however, that turpentine is a kidney irritant, and consequently should not be used too frequently nor for those who have nephritis in any form.

Enemata are of great value in diarrhoeas. In children's diarrhoeas, enemata of two to five per cent. glycothymoline are of especial value, used twice daily.

THE TREATMENT OF PELLAGRA

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In reporting my brief experience with pellagra, I am hoping to stimulate others to report their experience. It is not probable that any one of us has handled enough cases

of the disease to enable us to reach safe conclusions as to what may be expected from our treatment. I will say that my experience, while limited to three cases, justifies hope of our successfully treating pellagra. With the sanatoriums now operated by the profession, we are afforded ideal conditions under which to treat the disease. It may be safely accepted by any such institution, as it is certainly not contagious.

During the years of 1912 and 1913 I operated a sanatorium at Kentucky's famous health resort, Dawson Springs. This is largely a southern resort, and there are from 30,000 to 50,000 health seekers who visit those springs yearly. The most interesting disease observed and treated by me while there was pellagra. Only a few cases were seen, and of the number three were treated.

The first patient treated was a Mississippi cotton planter who was en route to consult a stomach and bowel specialist in Chicago, and stopped over a few days in Dawson Springs. While there he became so weak and sleepless that his wife feared to undertake the trip with him. On July 8, 1912, I was called to one of the hotels to see him. He was allowed to remain in the hotel during the course of his treatment under the care of his wife as nurse.

This man was 55 years of age, former health good, until about ten months previous, when his stomach became affected, yet his digestion seemed fair. The bowel soon became involved and a serious diarrhea resulted and continued in spite of all attempts to check it. In this time his weight had reduced from 220 pounds to 140 pounds. In the spring, about April, a symmetrical "sunburn" had appeared on hands and forearms; this persisted. He also had hypersensitive skin areas over stomach and liver—so sensitive, indeed, that he could not bear cover or clothing to rest on them.

He was very nervous, and practically sleepless without an opiate, which his physician had been giving him for several months; heart action was rapid and weak (120 per minute); kidneys normal; he had no fever nor suffered any particular pain; bowel evacuation examined by state laboratory, but reported negative; mucus was abundant, however, and strips of bowel lining were occasionally observed with the stool. This case was considered hopeless by all physicians who had formerly treated him, according to his wife's statement.

The plan of treatment was changed from that of treating the symptoms to a constitutional treatment. We began reducing the opiate regularly and in four weeks had him clear of it. His food was largely of "fresh milk" for a few weeks, with raw egg and liquid nourishment. He was allowed to drink the iron water only, which has an astrigment effect on the bowel and acts as an appetizer. He was treated from once to twice a day osteopathically. The dorsal spine was very rigid and congested. The whole spine was treated out thoroughly every day until after the fourth week, when improvement became noticeable. First the nervousness was improved and natural sleep returned. The bowel movements were decreased from ten to twelve to four or five per day. Appetite was better and food was modified and increased. In the fifth week he was allowed to sit up a little, as the heart action was better. The skin lesions by this time were so improved as to give no further trouble.

His improvement continued satisfactory until he left for home the middle of September. He was gaining in flesh and strength regularly, and while he was far from a strong man, he had passed the crisis. He has continued to improve until at last he is a well man. My last report from him was received on October 14, 1914, in which he said his weight is now 200 pounds and he is apparently as strong and well as ever, with no symptoms of his former trouble.

The second case was that of a young man 22 years old, of a good family and of good personal habits. He had been boss of a logging camp in west Kentucky for fourteen months, was a hard worker and hearty eater. Their camp food was often poorly prepared and consisted largely of corn bread, bacon and canned goods.

After eight months of such life his appetite failed, and later indigestion and diarrhea appeared. In the spring an exema appeared on his hands and the front part of legs. In July he grew worse and was forced to give up his work and call in a physician. Rest and treatment appeared to improve his condition generally, but the diarrhea refused to yield. He came to me to get relief from the diarrhea. This was August 20, 1912. I was caught entirely off guard and considered it an easy case with his nervousness and insomnia resulting from diarrhea. Accordingly all efforts were directed to the checking of this troublesome symptom.

In three weeks I dismissed him as cured, for the diarrhea was under control. While he was as yet unaccountable nervous and apprehensive with a tendency to despondency, I assured him that he would be all right later. At home for a few days he seemed to rapidly improve, but without any apparent cause he again became sleepless and mentally upset.

After one week at home his father sent him back to me, not realizing the serious condition of the boy's mind. When he arrived at the depot in Dawson he opened one of his grips and left his baggage in the waiting room open, and wandered aimlessly about the town and in the suburbs until about 6 o'clock in the evening, having arrived at 2 P. M.

I learned of his arrival and instigated a search at once, and found his baggage as mentioned in the waiting room. After a fruitless search of all hotels and boarding houses I returned home and about 6 o'clock he wandered into my place in a dazed condition. He would neither eat, drink nor talk. He developed suicidal tendencies and had to be guarded for five weeks. I soon became sure that this was a case of pellagra.

His family were questioned closely and reported the skin trouble which he had in the early spring. Laboratory examinations were made of his blood, urine and feces, but no light was thrown on the case. After making the diagnosis of pellagra it seemed possible that I had precipitated this mental state by checking the elimination so quickly. His bowel was acting now only when injected, and he urinated but once per day. He appeared not to refuse to eat or drink to displease or to be contrary, but he felt no need for food and seemed to be afraid to eat. After all my resources had been exhausted and our patient had lost 30 pounds in four weeks, it looked like a hopeless case. He was never found in a deep natural sleep during the first four weeks of this stage of his affliction. In that time the food and water he consumed was very little indeed.

Several physicians were asked to see the case, but none agreed as to what his trouble was, or could offer any suggestions of value. At last I decided that rather than let him remain indoors in a stupor all day that I would exercise him each day to the limit of his endurance, with the idea that he would necessarily have to eat and drink to support the extra combustion. His strength was surprising in view of his long fast. After a few days of the forced exercise he was drinking more water and sleeping better and soon was eating better. The exercises were increased each day until after ten days he was eating, sleeping and talking. His talking up to then had consisted of "yes" or "no" in answer to a question, and only after it had been asked three or more times.

There is little left to say concerning this case except that in five weeks after the exercise was begun he had regained his weight and in ten weeks his mind was clear and he has never had a relapse. The bowel action became normal and his health was in every way restored.

I have kept in close touch with this case and know that he is well and does hard farm labor, and is today a well, healthy man.

The third and last case was seen in August, 1913, a most typical case, presenting the trio dermatitis, diarrhea and nervous and psychic disturbance all at once. The symmetrical skin lesions so characteristic of pellagra had persisted for four months in spite of the many remedies of many physicians. The diarrhea was also persistent in spite of all efforts to check it, the nervousness was pronounced and he was most despondent and gloomy.

This patient was a man of west Kentucky. Fifty-one years old, proprietor of a cheap restaurant. He also operated a bakery in connection with his business. This patient had a fair appetite and fairly good strength, had lost only 30 pounds of his former 210. He was allowed to take the baths, and was directed to drink from one to two gallons of the salts water per day. The water from these salts wells when drunk in such amounts cause from five to eight watery stools per day. It also acts quite freely on the kidneys. He was allowed a liberal yet well balanced diet. After four days he had cleared mentally, his dematitis was scarcely complained of. Then the water was reduced so as to cause but two liquid actions per day.

He was now surprised that he had ever considered his case hopeless and freely asserted that he was well again, or nearly so. In spite of all efforts to convince the man that he had pellagra and that he should be under treatment and observation for several months, he insisted that he would be well in a short time and therefore would discontinue treatment. This he did after but seven days.

He returned to his home, where he resumed his usual occupation. After one month at home he decided that he had better return to me for a few days, which he did, and remained this time but three days. He was neither sleepless nor despondent this time, but the hands were "burning," the skin was hyperemic and rough. I had a photograph made of them this time. Again he rapidly improved and in three days was feeling so much relieved that he could not be induced to remain longer. He promised to take osteopathic treatment near his home, but never did so. Shortly after his return home I located in Louisville, but kept in touch with the case and it ended thus:

After a few months he was losing weight again, all symptoms were more intense, he became despondent and finally insane before his death, which was six months after he left me.

I report this case—not because it was cured,—but because it responded to the treatment so satisfactorily as to leave little doubt in my mind what the result would have been under the best circumstances and continued treatment, as it was not so severe nor as far advanced as either of the other cases reported.

General Considerations

My brief experience with pellagra does not lead me to consider it a disease of "spinal origin." The spine was found quite rigid, however, especially in the splanchnic area. The whole of the spine was abnormally rigid, but this I am led to believe is reflex, rather than primary.

The osteopathic treatment was given every day and often twice per day to over-

come this rigid condition and to keep the spinal muscles relaxed. There certainly is no specific osteopathic lesion accounting for pellagra, hence there can be no specific treatment given; but on the same principle that we treat pneumonia, measles, scarlet fever, etc., successfully without recognizing or removing a specific lesion, so we can deal with pellagra. That character of treatment which removes the cause of nerve impingement, or circulatory disturbance, and promotes elemination of disease toxines, is the treatment indicated.

To that end the diet should be regulated and adopted to each individual case. Corn products were eliminated from the food of my patients, otherwise a light, well-balanced diet was given.

Nothing will be said of the diagnosis of pellagra. It is a long yet interesting subject. I have found Dr. Niles' work on Pellagra, published by W. B. Saunders Co., very satisfactory. A prominent M. D. once said to me that they could seldom diagnose the disease except by the four "D's"—*Dermatitis, Diarrhea, Dementia* and *Death.* If we would be more expert than that in our diagnosis we need only to familiarize ourselves with the disease.

It certainly would be the height of folly to indulge in assertions now as to what may or may not be expected from the osteopathic treatment of pellagra, but I confidently predict that when the osteopathic profession turns its attention seriously to this strange disease it will be found we will show a higher percentage of cures than is at present being obtained by other physicians.

COURIER JOURNAL BLDG.

EXPERIMENTAL AND CLINICAL STUDY OF GOITRE

CARL P. MCCONNELL, D. O., J. DEASON, D. O., AND H. L. COLLINS, D. O.

Series No. 27

Report of the A. T. Still Research Institute

THE purpose of this series of experiments was to try to determine the relation of interosseous lesions to enlargement and perverted function of the thyroids and to determine the region of the spine in which interosseous lesions were most active in influencing such changes.

Literature—So far as we know, there has been no extensive experimental work done along this line and we can therefore only refer to case reports. For a number of years, Dr. McConnell has observed that lesions of the upper cervical region seem to be most influential as causative factors of goitre, and that treatment directed to this region has affected favorable results in a large percentage of about eight hundred cases which he has had under observation.

Recently other research workers have seemingly demonstrated a close relationship between abnormal development and function of the thyroids and mechanical interferance with the middle and superior cervical ganglia.

Method of Study—For the purpose of determining the effects of osteopathic therapy in the treatment of goitres and for the purpose of determining the effects of interosseous lesions on the thyroids we selected twenty animals which were divided into two groups, as follows: The first ten animals were dogs which had enlarged thyroids, and the second ten animals were dogs which had no discoverable thyroid enlargement. All environmental conditions, food, water, exercise, etc., were kept the same for all animals used in this series.

The animals of the first group were carefully observed for a period of from two to four weeks before treatment was begun. Careful measurements of the neck were made; their weight was regularly recorded and their general physical condition carefully noted. Osteopathic corrective treatment was applied to the upper cervical region only (second and fourth cervical) with the following results:

Dog No. 1. This animal was a male, fox terrier about five years of age, very much emaciated and had a large pulsating goitre, and also a skin infection. The dog was well fed for one month and given lysol baths but there was no improvement in nutrition nor in the condition of

The clinical summary of this article is written by Dr. McConnell, the pathology has been done by Dr. Collins assisted by Dr. McConnell and both Drs. McConnell and Collins as well as others of the Institute staff have assisted me with the experimental work.—*J. D.*

the skin infection. The size of the goitre had not reduced. At the end of a month treatment to the rigid and subluxated 2nd and 3rd cervicals was begun. At the end of the first month of treatment there was some improvement in weight, the goitre was slightly reduced in size and the skin infection had improved. During the following month the goitre had reduced in size, the nutrition had continued to improve and the skin infection was completely relieved. This animal was observed for five months during which time the circumference of the neck had decreased from thirteen and three-fourths inches to twelve inches. The animal had grown very fat and was in excellent physical condition. The goitre had not been completely reduced but nearly so and the perverted metabolism was completely normalized. A most interesting observation in this case was that with the improvement in the nutrition and the reduction of the goitre the animal's sexual activities were practically lost.

Dog No. 2. This animal was a female fox terrier about one year old and was in good condition, but not fat. A small goitre was palpable, with circumference of the neck over the gland being ten and three-fourths inches. A rigid condition of the second and third cervicals was found. Treatment was begun and continued for a period of three months during which time the circumference of the neck over the gland was reduced to nine and one-half inches.

Dog No. 3. This animal was a large mongrel, male, seemingly in good condition of nutrition and about five years of age. The dog had an extremely large pulsating goitre when received, the circumference of the neck over the gland being nineteen and one-half inches. Upon examination this animal was found to have a very marked rigidity of the entire upper cervical region and a specific rotation of the 3rd cervical. It was first treated by breaking up the rigidity as much as possible under anaethesia. This treatment was continued once each week for three weeks in the beginning, after which movement between the vertebrae could be accomplished without anaethesia. There was no noticeable change in the gland until about the end of the third week. At this time the gland began to soften and at the end of five weeks the circumference of the neck had reduced to seventeen and one-half inches. This animal was kept under treatment for a period of four months at the end of which time the circumference of the neck had reduced to fourteen and three-fourths inches but there was yet much noticeable enlargement.

Dog No. 4. This animal was a medium sized male cur, in good physical condition. There was a bi-lateral enlargement of the thyroids but no pulsation. The circumference of the neck over the gland was fourteen and one-fourth inches. A rigid condition of the second and third cervicals was readily palpable. Treatment was begun for the purpose of correction of this lesion and was continued twice weekly for a period of four weeks. The circumference of the neck over the gland during this time was reduced to thirteen inches, but the enlargement had not been completely reduced.

Dog No. 5. This was a small mongrel, female, about one year old. There was a large bi-lateral pulsating enlargement of the thyroid which seemed to interfere with respiration. There was also some nutritional disturbance. circumference of the neck over the gland was twelve and one-fourth inches. There was a readily palpable lesion in the 2nd and 3rd cervical vertebrae. Treatment was continued for a period of one month during which time the circumference of the neck was reduced to eleven inches.

Dog No. 6. This was a large cur, male, with readily palpable bi-lateral enlargement of the thyroid. The circumference of the neck over the gland was seventeen and one-half inches. This animal was treated for a period of six weeks during which time the circumference of the neck over the gland was reduced to fifteen and one-half inches. On post-mortem the glands were observed to be only very slightly larger than normal.

Dog No. 7. This animal was a medium sized Scotch terrier, male, with a bi-lateral pulsating goitre. The circumference of the neck over the gland when received was fifteen inches. A markedly rigid condition of the 2nd and 3rd cervicals was treated and normal movement was obtained during the six weeks of treatment. At the end of this time the circumference of the neck over the gland had been reduced to thirteen and one-half inches. There was no noticeable enlargement of the gland at the time the dog was killed.

Dog No. 8. This was a small Scotch terrier, male, with a bi-lateral goitre. There was a marked rotation of the third cervical to the left. The circumference of the neck over the gland was eleven and three-fourths inches. This animal was treated for a period of six weeks during which time the interosseous lesion was corrected and the accompanying rigidity was reduced. At the end of this period of treatment the circumference of the neck over the gland was nine and three-fourths inches and there was no noticeable palpable enlargement of the gland.

Dog No. 9. This was a small black and tan, female, about two years old. A marked rigidity of the second and third cervicals was readily palpable. The circumference of the neck over the gland was twelve inches. This animal was treated for a period of four weeks during which time the circumference of the neck was reduced to eleven and one-fourth inches. The goitre in this case was not a large one, but complete reduction of the enlargement was effected during this period of treatment.

Dog No. 10. This was a large mongrel, female, in good physical condition, and had a very large bi-lateral goitre. It was kept for a period

of two months as a control. This animal was not treated but was kept under exactly the same environment and food supply, etc., as the other dogs. During this time the circumference of the neck over the gland remained constant, at seventeen and three-fourths inches.

Dog No. 11. This was a medium sized brown and white female in excellent condition, but had a very marked bi-lateral goitre. The circumference of the neck when received was fourteen inches. This dog was kept for a period of three weeks without treatment during which time the circumference of the neck remained the same. For the next three weeks treatment was given twice weekly for the purpose of correcting the rigid 2nd and 3rd cervicals. During this period of time the circumference of the neck over the gland was reduced one inch.

In nearly all of the above animals it was observed that those cases in which the nutrition was poor there was much improvement as the size of the gland reduced. It should be noted that in all instances treatment was specific to the lesioned area only.

The following animals were carefully selected dogs of various ages in which no palpable enlargements of the thyroid glands could be discovered.

Dog No. 1 A. This animal was kept for a period of three months during which time it was found to be in perfect condition. It was then lesioned (3rd cervical to the right) under anaesthesia. After a period of one month there was a slight palpable enlargement of both thyroids.

Dog No. 2 A. Same results as above.

Dog No. 3 A. This animal was accidentally killed before any results were obtained.

Dog No. 4 A. This animal was lesioned, rotation 2nd cervical to the right. It was kept for a period of six weeks during which time a very slight enlargement of the thyroids was palpable.

Dog No. 5 A. This animal was lesioned, 2nd cervical rotated to the right, and kept for a period of five months during which time there was only a slight thyroid enlargement.

Dog No. 6 A. This animal was lesioned, 3rd cervical rotated to the right and was kept for a period of six weeks, but there was no noticeable enlargement of the gland.

Dog No. 7 A. This animal was lesioned, 3rd cervical rotated to the left. During the first five weeks after the lesioning there was no noticeable change in the thyroid but during the sixth and seventh weeks both glands materially increased in size. After about one week following the lesioning the nutrition of the animal was somewhat impaired and the dog lost weight as the goitre developed.

Dog No. 8 A. This animal was lesioned, 3rd cervical rotated to the left and was kept for a period of four weeks during which time no noticeable enlargement developed.

Dog No. 9 A. This animal was lesioned and cervical rotated to the left; was kept for a period of thirteen weeks during which time a marked enlargement of both thyroids had developed.

All dogs were killed by ether or chloroform and postmortemed. The thyroid glands were carefully and promptly removed from all of the above dogs and a careful histological study was made with the following results:

Pathology

We will briefly summarize the results of our pathological findings, rather than give a detailed report on each animal, for they are so similar that it would simply be a repetition in most cases.

The microscopic findings in both of these series of animals, those having goitres already existing and those in which the goitre was produced, are practically the same as regards quality. The amount of quantity of pathology varies from only a slight involvement to a severe or marked parenchymatous goitre. The goitres found in all cases were of the simple parechymatous type. There was colloid deposit and active hyperplasia of the follicular epithelial cells of the gland. In some cases this was comparatively slight, possibly due to the animal's resistance or the length of time the animal was lesioned before death, or both. In all cases where the goitre had pre-existed, there was evidence only of a simple parenchymatous goitre. In those animals in which the goitre was produced there was a mitosis or hyperplasia of the follicular cells, with slight irregular deposit of colloid material. In the few cases which had clinically shown marked enlargements, the colloid material was regularly and abundantly distributed throughout the thyroid, and the number of hyperplastic cells abundant. In one case a slight hyperemic condition was noted.

In dog No. 3, the amount of colloid material was not abundant and quite irregularly distributed. Contrary to what we find in an untreated simple parenchymatous goitre.

The microscopic study of the tissues

taken from the animals used in this series, has been very interesting and numerous questions have arisen and new side-issues opened, which we have not thought of before. For example, by what manner does the reduction of the thyroid take place and what is the structural change that takes place when a goitre is reduced or being reduced? What is the remote pathology, if any, in other tissues occuring as a result of thyroid enlargement?

We have been able to collect some data dealing with the above questions, but there are so many factors which may influence these that we prefer not to offer them until more work has been done, at which time we perhaps can make use of them.

Clinical Summary

This short clinical summary is based upon an experience of several hundred cases. There can be no question that the majority of cases can be cured. General health (resistance) is an important factor. Then no doubt there is a point in the diseased condition wherein response is not forthcoming and surgical interference seems necessary.

There is a class of cases of enlarged thyroid that does not require any special attention to the gland, for just as soon as the physiological requirements are met the gland returns to normal size. This no doubt accounts for the recorded cases wherein the osteopath has secured results by attention to the lumbar and dorsal alignment, etc., although as we shall see later there may be other factors in these particular cases.

But from a specific osteopathic viewpoint, interosseous lesions, from the second to fourth cervicals, particularly rotations between the second and third, are the primary factors. This requires close attention in diagnosis and treatment; the adjustment must be absolutely specific or disappointment will certainly result. This lesion seems to have a direct influence upon the vasomotors of the gland; and in many cases is a sufficient cause in itself, while in others some additional factor will be an exciting cause. No doubt other cervicals, upper dorsals and ribs, and possibly the clavicle, when lesioned, will influence the integrity of the gland (Dr. Still makes note of this in his writings). Direct treatment to the gland amounts to but little.

Lane, of England, claims good results from his short-circuiting operation. No doubt intestinal stasis by the retention of toxins may disturb the gland. Likewise cases of focal (septic) lesions of the tonsils, gums, etc., may be exciting causes. But within all probability in most of the cases, at least, there will be found an impaired innervation of the thyroid, viz., lesion between the second and third or the third and fourth cervicals. It is always well to keep in mind the possibility of the so-called focal lesions.

Then attention to the pelvic organs should not be neglected; in some cases the exciting cause may arise here. Adjustment to the lower spine and innominata is necessary, as well as care to the viscera.

The above also applies to exophthalmic goitres. This probably starts as a throphoneurosis (vasomotor) due to the cervical lesions. Septic foci, particularly intestinal stasis, are frequent factors. Abderhalden, in his "Defensive Ferments," says: "Here (Basedow's disease) we find decomposition of the thymus gland, of the thyroid gland, and very often of the ovary." The cure of these cases depends upon most careful attention to the cervical lesions and the general resistance. It requires time to re-establish normal glandular innervation, but it can be accomplished if the disease has not progressed too far.

The average length of treatment in the series of clinical cases has been three months. Complete reduction of the abnormal size is not always essential for a cure. Individual cases have required treatment from two weeks to a year or more. Treatment once a week or less often is best after a certain adjustment has been made. This refers to the specific thyroid technique; other factors in the individual case should be met according to the indications.

The clinical fact that stands out beyond all others is the disturbance of the gland's innervation, which should be met in a most precise manner.

RESEARCH INSTITUTE.

OSTEOPATHIC ADJUSTMENT.

Continued from page 281.

ment of structure as a means of normalizing function. Nature's one great method of healing all disease is by normalization of structure. When this law fails to operate in either histological or anatomical pathology, aberration in function is certain to arise, and result ultimately in incurable disease.

Within certain limits the organism is self-adjusting in both structure and function. It is only when this limitation of adjustment inherent in the organism has been reached, that the physician's services are required, and it is a singular fact that this power of adjustment of structure can be exceeded by the physician, over and above that possessed by the organism itself.

That the bony skeleton of man may under adverse conditions become mal-adjusted to such an extent that the organism is unable to readjust the bony parts, is known to all scientists. Muscular contraction and relaxation are, under normal conditions, regulated by the organism itself; however, a state of chronic contraction may arise in either the visceral or skeletal muscles of the body, in which relaxation becomes impossible by the organism itself. Ligamentous or visceral adhesions may be formed in the tissues of the body to such an extent that the organism is powerless to remove them itself.

These and other forms of anatomical pathology, the organism is powerless in itself to normalize, and from such lesions, disturbances in function arise, which are far reaching in effect. Irritation to the nervous system, change in blood pressure, obstruction to the circulation, impairment of glandular secretion and excretion, faulty nutrition, accumulation of toxic substances, imperfect respiration, etc., may arise as a result of the anatomical lesion which the organism is unable of itself to adjust. By normalizing this anatomical pathology of structure, the physician is able to restore to the organism its inherent power to regulate all bodily functions, which power has been suspended by the anatomical lesion. With the return to the organism of ability to regulate its own functions, normal metabolic processes become active and insure to the organism the expression of all normal vital phenomena.

The ability of the physician to exceed the organism in its power to adjust the structure of the body, applies more to anatomical, than histological, pathology. Fundamentally, the adjustment power of the organism, whether applied to histological or anatomical pathology, is vested in the irritability of cell-protoplasm, and the rise and fall of this quality or attribute of the cell, determines its responsiveness to regulation and control. In this sense it is quite evident that the adjusting power of the organism exceeds the power of the physician beyond all comparison. Because of this fact, the absolute and undisputed control of all vital phenomena of the organism lies far beyond the subordination and coercion of the physician.

The field of usefulness which opens up to the osteopathic physician is through adjustment of the anatomical lesion. The organism can perhaps better adjust its histological, than its anatomical, pathology. The irritability of cell protoplasms is better adapted, through its power of reaction to stimulation, to adjust miscroscopic structure of the body, than anatomical structure. And for this reason the organism is in greater need of the physician's assistance to normalize its anatomical lesions. There is no question but what the physician is able to greatly aid and hasten the re-establishment of many functions of the organism over which the organism itself exercises adjustment power; but this service is incomparable to that of adjustment of structure, over which the organism exercises but little or no self-adjusting power.

This service is greatly needed by the organism because its power of adjustment and adaptability is limited. If the body were a perfect automaton, the physician could not add anything to its efficiency, but being limited in its own regulation and control, the physician is able to contribute greatly to its self-government by normalizing that part of its mechanism over which the organism presides with but limited power.

Osteopathic Therapy Is a Prophylactic System of Treatment

This is true because the normalization of structure produces a physiological expression of function. If the structure of the organism is kept normal in composition, size and position, there will be no aberration in function. Efficiency in function is dependent upon structure. Functional efficiency is of greater importance to the organism in maintaining health because suppression of many functions in the organism leads directly into disease. This is true of the functions of excretion and secretion. Bouchard, a French physician, writing of auto-intoxication, which arises from lack of elimination of waste from the body, says:

> The blood is constantly being traversed by a current of toxic material. It is true that the poison is never found in it but in harmless quantities. There is less toxic matter in the blood than in the organs. The anatomical elements form substances which, if retained, would fetter their life; but these substances leave them little by little, in order to penetrate into the blood. The quantity of toxic matter eliminated by the kidneys in twenty-four hours is without doubt, one-half of what is necessary to kill the whole of the body, and the blood has really received that quantity in twenty-four hours; but the elimination is incessant, and at every instant of the day the blood never contains at one time more than an infinitely small fraction of poison.

This same authority goes on to say of bile and its toxic qualities:

> According to my experiments, from four to six cubic centimeters of bile are required to kill, in convulsions, a living animal weighing one kilogram, and since the daily secretion of bile is about 1 000 cubic centimeters, we must conclude that during every twenty-four hours a man makes, by the activity of his liver alone, an enormous quantity of poison—enough to kill, in twenty-four hours, three men of his own weight.

If a lesion is present in the organism which in part suppresses the functional action of the kidneys or liver, the elimination of waste from the system will be decreased, and as a result of such decrease, an accumulation of toxic substance will begin to form in the tissues and organs of the body, which eventually produces very grave forms of symptomatology. What is true of the kidneys and liver is true also of all other excretory organs of the body.

The function of excretion must be kept active in the organism if disease is to be avoided. Lesions which suppress the functional action of the emunctory organs of the body are predisposing factors to disease, because they decrease the amount of waste eliminated, and permit this toxic matter to be stored in the body. If such lesions remain and continue to suppress the excretory function, an auto-intoxication may arise, which may slowly poison the system, or a more rapid development of disease may result, in which a fever becomes manifest along with other grave symptoms.

The prophylactic part of treatment here is to remove the lesion which is causing the accumulation of waste in the system. If a city sewer becomes obstructed in any way, the proper repair for such a sewer is the removal of the obstruction. In disease, the lesion is the cause of the lack of efficient excretion, and to remove such lesion and restore normal excretory action, is prophylactic treatment. Sanitation is one of the greatest of prophylactic agents, and must be applied as rigidly to the human body as to the great city. Lesions which decrease the efficiency of such organs as the lungs, skin, kidneys, bowels, etc., are a menace to the health of the body, because an inefficient elimination of waste from the organism is the beginning of many diseases. The almost unbelievable amount of waste arising within the body constantly from normal metabolism and its toxic nature make it absolutely necessary to maintain normal action of the excretory organs. It is, of course, desirable to keep the exterior of the body clean, but of far greater importance to the health of the individual is the maintenance of a sanitary condition of not only the excretory organs themselves, but of the cellular tissues of which all anatomical parts of the body are composed. The ash arising within the cell from cell-metabolism, must be evicted and deported from the cell, because its retention produces retrogressive chemical action on the cell-structure, and unless such retrogressive action is arrested, the whole structure of the cell may undergo complete change and disintegration.

Sanitation of the individual cell, of which all tissues of the body are composed, lies in

maintaining the greatest efficiency in certain organs, such as the thyroid, adrenal, pancreatic and hepatic glands, the ovaries and testes, the pituitary body, etc., which constitute the auto-protective mechanism of the body. These organs furnish to the body an internal secretion which is used by the organism to neutralize the toxines which constantly arise in the cells from normal metabolism, and by so doing, prevent auto-intoxication.

The colloid substance of the thyroid gland, as well as the secretions from the ovaries and testes, has a marked influence upon oxidation, which in some way is dependent upon these secretions for its most perfect manifestation. As a very large amount of waste is oxidized in the body, the impairment of this function is of vital importance to the organism. The adrenalin of the adrenal glands has a direct neutralizing effect upon certain toxins arising from normal metabolism. If this substance is altogether lacking in the system, a brownish deposit in the skin becomes manifest, followed by death in a short time. If the glycocholic and taurocholic acids of the liver, which hold the cholestrin in solution, are suppressed, a precipitation of this cholestrin will result in the formation of gall-stones. If the bile is diminished in quantity constipation of the bowels will result, if the pancreate secretion is suppressed, diabetic symptoms arise.

These internal secretions, formed by the auto-protective mechanism of the body, are the great factors in maintaining a sanitary condition in the cells which compose the tissues of the body. They are the reagents which determine the chemistry of the blood, and through the blood, change the composition and structure of all tissue-cells. Cell-sanitation reaches its highest degree of perfection through the blood stream. The internal secretions, made by the auto-protective mechanism, standardize the blood, and give to it an antiseptic and germicidal action unequalled by any serum introduced from without. The internal secretions are the great immunizing reagents of the blood and give to it a defensive quality to infectious and contagious disease that has never been equalled by any artificial immunity from serum. The body makes its own serums better than any chemist can make them for it.

If the organs, which make the organic chemicals of the body, are kept in good repair, when the demand arises for extra immunity to disease, these organs will supply the needed chemical elements to meet the demand. But if the physical structure composing this auto-protective mechanism is defective, it will be impossible for the body to supply this much needed internal secretion to the blood, because of this physical defect in the mechanism which produces it.

Chemical equilibrium is established and maintained in the organism by secretion and excretion. When lesions are present in the organism which modify the potency of the internal secretions produced by the auto-protective mechanism, immunity to disease decreases just in proportion to the change in strength of these internal secretions. When the quantity and quality of these secretions falls below a certain standard, then immunity to acute infections and contagious disease fails, because the blood does not contain the necessary elements to resist invasion by pathogenic bacteria.

When lesions are present in the organism which obstruct the elimination of sewage from the body, an accumulation of waste begins, which, as it increases, becomes more concentrated, with cumulative toxic powers, until at length diseases becomes well established. The resourcefulness of the organism in defending itself against its own toxins that arise from normal metabolism, and toxins from pathogenic micro-organisms that enter from without, lies in the amount of available functional capacity for secretion and excretion, over and above that required for normal metabolism. This extra functional capacity for secretion and excretion is an asset to be used in time of emergency, and is to be attained and maintained by removing all lesions which impair the efficiency of any organ having to do with either secretion or excretion.

There is a latent resourcefulness of functional capacity possessed by the organism

for emergency service. The amount of this latent efficiency varies widely in different individuals, and in the same individual at different times. It is the physician's duty to increase this latent efficiency of function to its greatest extent, for in so doing the most efficient prophylactic therapy is given the patient. As an efficiency in function is increased, over and above that required for normal metabolism, the resourcefulness of the organism is added to for meeting all extra demands made upon it for maintaining its own vital phenomena.

Prophylactic therapy is, therefore, excess capacity of functional action, possessed by the organism for self-preservation and self-defense.

If it be true that the great primal factor in all disease is defective structure of the body, how very important it is to have these defects corrected as soon as they appear. This fact is true not only of the adult, but also, and more especially, of the child. Many times lesions are produced in childhood which nature is unable to normalize, and such lesions remain, year after year, slowly undermining the functional activity of one, or many, organic parts, which in time produce chronic symptomatology. Had these physical defects of the child been discovered by proper examination made by a competent osteopathic physician, and corrected during the more plastic age of childhood, many of the chronic diseases of the human family which exist today in the adult would never have existed.

Today, we hear much of prophylactic treatment for all diseases. The old school of medicine is stressing this feature of medicine more and more, in sanitation and hygiene, in out-door living and pure food, etc. But in no other department of medicine is there to be found a system of therapy that anywhere near approaches, for prophylactic purposes, the system of osteopathic therapeutics intelligently applied to childhood.

Osteopathic therapeutics is prophylactic because the physical defects in the anatomical structure may be discovered long before they begin to create much disturbance in function, owing to the power of compensation which the organism possesses toward the lesion. These physical defects, if corrected at this time, will actually prevent chronic diseases from developing in the future.

This diagnostic feature of osteopathic therapeutics places it on a genuine prophylactic basis and gives to this system of treatment an unprecedented advantage over the old system of medicine, which waits for the disease to develop before applying any remedy.

Such a distinct advantage in diagnosis of disease, and its prophylactic advantages over old methods, will not long be overlooked by parents, teachers, and board of education, in giving to the on-coming generations the advantages of such professional services. It will not be many years until osteopathic physicians will be retained by school boards as examiners and physicians in the public schools. Indeed, in some States this system is about to be introduced at the present time.

Not long ago a strong article appeared in one of our daily papers from the Parent Teachers' Association, criticizing the medical inspectors of schools for examining children and debarring them from school, without doing anything to correct the diseases for which they were suspended from school. The article stated that the public did not wish the inspection to keep children out of school, but to aid in keeping them in school, and at the same time maintaining hygienic conditions for all other pupils.

By correcting the lesions of children, which are the predisposing agents in creating diseases of all kinds, a much smaller percentage of suspensions will be necessary, owing to the fact that the index of resistance to disease of all kinds is raised to normal. Raising the index of resisting power to the normal, for those whose vital resources for combatting disease are subnormal, insures still greater protection to normal children in that the possible entrance of disease to all, is closed by normalizing those who are more susceptible to disease.

Osteopathic therapeutics not only is competent to diagnose structural defects of

anatomy prior to failure of organic functions, but it is also competent to remove those defects, and normalize the functioning power of all organs of the body. By this positive method of diagnosis and treatment the efficiency of every child is brought to its greatest development. By this method of treatment, chronic diseases are stamped out entirely, and acute diseases are much less likely to occur. Properly applied to children, it is the most economical system of therapeutics known today, because it is indeed genuinely prophylactic.

Traction Building.

URINALYSIS AS AN AID TO DIAGNOSIS AND DIET

Arthur E. Allen, D. O.,
Minneapolis

WHAT is the significance of indican? What does it mean to the physician? What does it mean to a patient when found in increased amount in that patient's urine? What indication is it as to diagnosis, prognosis and treatment? For one thing, indican when present in urine in more than a trace, points to undesirable decomposition in the intestines, whether constipation exists or not. Rather important, is it not, when deciding on treatment and outlining a diet?

Again, given a patient with a decreased output of urea. Urea is the most important nitrogen organic element in the urine. Nitrogen is the most important constituent used in body building. Whether the decrease is due to lack of nitrogen intake in proportion to body weight or to a diseased condition of the liver, remains to be proved, yet it is all important to know when making an examination.

The urinalysis consisting simply of tests for sugar and albumin, is of little value in the majority of cases, simply because sugar and albumin are not present in the average case going to a general practitioner. However, a knowledge of the variation from normal in other urinary elements such as urea, chlorides, phosphates, indican, bile, blood, and pus, and the presence of such unorganized sediment as crystals of uric acid, calcium oxalate, triple phosphates and so on, is of inestimable value when making a diagnosis and especially when suggesting a diet. Why? Because a deficiency must be known before a sufficiency can be supplied. Consequently, is it fair to the patient or to the physician to overlook one of nature's reports on body efficiency?

Of course analytical work takes time and a busy doctor has very little time to make laboratory examinations. Many physicians have not access to laboratories devoted to that work, hence the purpose of this and the following articles will be to give to the physicians who must do the work themselves, if it is done, and to those who have the time to do it, a short-cut to urinalysis, and to impress on all the actual value of such findings.

Each test will be taken up with a view toward accuracy, efficiency and economy, stating apparatus, reagents, technique, diagnosis, prognosis and treatment, including various foods which may be used to produce an increase or a decrease among the various elements. Some cases will be cited where osteopathic treatment to nerve centers has shown a marked change in the urinary findings. The tests will be taken up in the order of a routine examination, consisting of the physical, chemical and microscopic examination. Many tests, fully as good as those recommended, will be omitted, due to the fact that time saving is one of the objects of these articles.

General Apparatus Required

One sink or wash bowl.
One shelf, glass or wood, 12 inches by 25 inches.
One cupboard for apparatus and reagents.
One test tube rack for six tubes.
One box of test tubes.
Glass funnel.
One conical glass.
One glass beaker, medium size.
One glass graduate.
Two pipets, curved end, graduated for one c. c.
Filter papers.
Two glass flasks for mixing reagents if desired.
Two test tube cleaners.

Collection of Sample

Throw away first voidance in morning; save rest throughout day and first voidance following morning. Retaining vessel sterilized, stoppered and kept cool. If single sample is taken it should be three hours after heartiest meal.

Preservation: (a) By keeping cold, or (b) Shake five drops of chloroform to the ounce.

Physical Examination

1. Transparency.

(a) Normal—Clear.

(b) Abnormal—Diagnosed by chemical and microscopic examination with other general symptoms.

2. Color.

(a) Normal—Light yellow to dark brown dependent on concentration.

(b) Abnormal—Diagnosed by chemical and microscopic examination and with other general symptoms.

3. Odor.

(a) Normal—Aromatic.

(b) Abnormal—Diagnosed by chemical and microscopic examination with other general symptoms.

4. Specific Gravity.

(a) Apparatus.

1. Urinometer standardized at 15° C. (60° F.) or 20° C. (77° F.) and glass cylinder.

2. Centigrade thermometer for determining temperature of urine.

(b) Technique.

Fill glass cylinder two-thirds full of urine, allowing urinometer to float without touching sides. Read urinometer scale at bottom of meniscus of urine.

Correction of Specific Gravity Reading

Take temperature of urine. For every 3° above standardization of urinometer (15° C. or 20° C.) add one to specific gravity; for every 3° below subtract one from specific gravity.

Example.

Urinometer standardized at 20° C. (77° F.).

Specific gravity reading 1.014 (expressed verbally as ten-fourteen). Temperature of sample 23° C. Corrected reading 1.015.

Normal.

1.010 to 1.020 (must be taken from twenty-four hour sample to be of clinical value).

Abnormal.

Diagnosed by chemical examination and general symptoms. Nitrogenous food, exercise, a neurosis, affect specific gravity.

5. Solids.

Vary according to specific gravity.

Estimation—Multiply last two figures of specific gravity reading by 2.33 (Haesser's Coefficient).

Example—Specific Gravity 1.015.

Solids—$15 \times 2.33 = 34.95$ grams per liter.

6. Chemical Reaction.

Apparatus—Red and blue litmus paper.

Test—Acid turns blue red. Alkaline turns red blue.

Normal—Slightly acid.

Abnormal — Diagnosed by microscopic examination and general symptoms.

Diet for Increased Acidity

Water—Alkaline or distilled, six to ten glasses daily.

Food—Milk, eggs, sea-fish, cabbage (salad or cold slaw), spinach, asparagus, lettuce, carrots and apples.

Alkaline urine usually due to bladder condition.

7. Quantity (24 hours).

Normal—U. S. 1200 c. c. to 1500 c. c.

Abnormal—Diagnosed by chemical examination and general symptoms.

Alterations in quantity.

Anuria—Complete retention of urine.

Oliguria—Twenty-four hour quantity increased, usually with fluid element increased out of proportion to solids.

Polyuria—Increased elimination of 24 hour quantity.

Diet depends on condition encountered.

Andrus Bldg.

Editor's Note—Following this introduction and general statement, for the next few months will appear very practical concise articles on urinalysis and diet in specific conditions.

TRANSPORTATION AND THE PORTLAND MEETING

Everything is progressing well with the Transportation Committee. The persons listed below have agreed to act as "Transportation and Boosters Committee" in their respective states. The complete list will be printed in the next issue of the JOURNAL.

The more one studies the railroad folders the more opportunities he sees opened up to him by this trip to the great Northwest. Plan to go with the party, help us to make a special train, mobolize in Chicago and come back by any route which appeals to you. So many are possible. The Grand Canyon of the Colorado to the South, Salt Lake and the Royal Gorge Route through Utah and the Yellowstone Park through the central, and then the infinite wonders of the Canadian Rockies to the north.

The going trip over the official lines, the Chicago and Great Western and the Great Northern, will be economical of time, give us splendid service and opportunities for wonderful sightseeing.

Special cars or trains will be arranged for from the East, Southeast, South and Southwest to join the party at Chicago or St. Paul. The state representatives will arrange for these parties. Mark the last week of July and at least the first two weeks of August off your calendar, and begin to lay aside for the trip, though it can be made much more economical than you have any idea.

E. J. PRATT, D. O.

Chairman Transportation Committee.

TRANSPORTATION "BOOSTERS"

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Editorials

THE OSTEOPATHIC PRINCIPLE

The first difficulty met with in determining the exact value of any therapeutic procedure is to estimate the part contributed by the psychic element. And since much successful practice is reported done purely on the psychic basis the effect of this element in any form of treatment must be duly considered, if we honestly determine values.

One of the great uses of animal experimentation, as we see it, comes in at this point. The careful attention of the reader is directed to the article on goitre presented in this issue by Drs. McConnell, Deason and Collins. To summarize briefly, a dozen dogs with thyroid enlargement, after being kept a number of weeks to eliminate the possible effect of new environment and good care on reducing the enlargement, were specifically treated. That is to say, the interosseous luxations and adhesions were corrected, and in each instance the neck enlargement, if not entirely removed, was greatly reduced. In another series after having been normalized for several weeks, interosseous lesions were produced in the dogs under anesthesia and in practically every instance palpable enlargement of the thyroid resulted in a short time. Histological study of the glands of the animals in the two series showed that the same conditions existed, parenchymatous goitre.

Along with this experimental work Dr. McConnell presents a summary of his experience with some eight hundred cases of this condition in the human subject, and this leads him to conclude that while there are other contributory lesions, the irritation of the upper cervical may be considered the characteristic lesion. And the correction of the condition and removal of the irritation in his judgment along with appropriate attention to general health, the reestablishment of resistance, effects a cure in most cases.

This seems to establish, as perhaps no other series of experimentations has established, the effect of the osteopathic lesion as the etiological factor, and its removal, plus proper attention to environment and general conditions, as the appropriate means of cure.

These dogs, practically without exception, under specific adjustment recovered from the condition. Others, upon which the same lesion was artificially produced, became subject to this disorder. The psychic could have had no effect on nature's processes in either case.

This subject suggests the question why is not osteopathy as favorable a medium as any other for securing whatever response there may be from the patient's entire resources directed toward the recovery of health? We do not have to admit nor deny nor determine the degree to which the psychic enters into any treatment, but whatever part it may play in recovery, no reason exists why it should not be employed in this treatment as in any other.

But this series of experiments estab-

lishes the effect of the osteopathic lesion. Do we ever forget to search carefully for this lesion, and do we realize that it may be difficult to find? Is there any danger of our becoming careless or treat these physical defects as a matter of routine because we see so many of them? One of the Latin poets said, "Things that we see every day we cease to wonder at." Is there any danger of our failing to appreciate the effect of the osteopathic lesion or of recognizing its place in our system of therapeutics?

The early graduate was apt to attribute every ill and ailment to the physical defect which he found, however hard some of them might have been to anatomically and physiologically connect up with the effect. That is routinism against which we are striving. We are advocating a careful physical examination and a searching inquiry into all contributing factors. For instance, a man may be eating what to him is an impossible food or an impossible combination of foods. Proper stimulation of the digestive tract may enable him, for a time at least, to take that unnatural food without manifesting unfavorable symptoms; the proper treatment is the correction of the dietetic error, together with removal of lesion if present. A person may be suffering from overwork or over-long hours of labor. You may be able, for a time at least, by proper stimulation to enable the person to accomplish his work with more ease; but unless to tide over a temporary necessity, the stimulating treatment is not the logical remedy, but rather the reduction of the work to the capacity of the individual under normal conditions.

All of our successful specialty work, particularly work in surgery and catarrhal conditions of the nasopharynx, emphasizes the fact of the causative effect of the osteopathic lesion, and equally emphasizes the fact that the permanent results obtained are through proper articular adjustment, and that the skillful peripheral work, however necessary, is merely accessory thereto.

The more we study it the more we analyze results, and the more experimental and microscopic work is done, the more the truth of Dr. Still's concept is borne in upon any one who is sufficiently intelligent and honest to accept it.

PUBLICITY BY THE PROFESSION

Recent letters from many members indicate that there is not a clear understanding of what the A. O. A. has undertaken in the field of publicity and why this was undertaken. Therefore, it seems desirable that the essential facts in relation thereto be presented to the membership.

In June, 1912, just previous to the Detroit meeting, the JOURNAL discussed this subject. One paragraph is quoted here which, so far as we can find, was the first expression along this line within the profession:

"If we could once come to agree that publicity of an ethical character is our duty, just as much as the maintenance of our organizations and our co-operation in legislation, it seems that the details of this proposition could easily be worked out. The main question seems to be, Are we ready to look upon publicity as a common duty? * * * Cannot some understanding be arrived at between the several state organizations and the A. O. A. that will enable publicity to be raised to the plane of a common duty and be treated as such, rather than as an individual venture?"

We suggest that the reader look up that article and from reading it he will see how far we have advanced toward our ideals, how we are finding ourselves and crystalizing our ideas and working out plans for professional support in the two and a half years which have intervened. Real publicity—not personal advertising—must be upon the basis of professional support.

There is as much reason for a few in a state to maintain a college financially, or bear the entire expense of securing legislation, as there is for them to finance the publicity for that state. It is very desirable that the practician educate his clientele and interest his community in osteopathy, both as a system of restoring and maintaining health and also as a school of practice. In the earlier days this was the only thing that could be done. No move has ever been contemplated which would interfere with or discourage this work. The wish is to encourage it, but not limit our publicity work to this phase. And with strong national, state and district organizations we should extend our educational and publicity work, do a different work, and reach many who have not been reached and cannot be reached by individual effort. It requires no argument to convince one that general education of the public must be centered in our organizations. By this, of course, we mean measures and methods other than those employed by the practician for the upbuild of his own practice.

At the Kirksville meeting in 1913 the Press Bureau and the *Osteopathic Magazine* were instituted. So far as the *Magazine* is concerned this was done after at least one year of careful consideration. The action was taken and the authorization given by the profession in one of our most largely attended meetings. The Board of Trustees carried out the instructions given by the profession, and both the Press Bureau and the *Osteopathic Magazine* have been in operation a little more than a year. At the Philadelphia meeting both were heartily approved of and commended.

The *Magazine* is open to subscription by laymen and by the profession, many of whom send it to interested patients, prominent people in their communities and to public libraries. A copy of it has gone to each A. O. A. member just as the JOURNAL of the A. O. A. does. If a very small subscription price is charged for these copies as should be done, or if they be cut off and it be placed on the subscription basis only (and one or the other of these must be done, for it is manifestly unfair to the *Magazine* to require its direct subscribers to pay for the 3,500 copies sent A. O. A. members), the *Magazine* has been entirely self-supporting and is evidently winning favor. The calls made in its behalf have been to secure for it a wider reading rather than for direct financial support.

At the Kirksville meeting when the profession ordered the magazine founded, the Board made an appropriation to maintain it for the first year. At the time of the Philadelphia meeting the magazine had paid its way so that this appropriation had not been drawn upon. And as stated above, if the actual cost per copy of the subscriptions to A. O. A. members be put to the credit of the magazine account, it continues to pay its way and is in no sense a charge upon the A. O. A. treasury. We believe it is not the intention of the Board to permanently back the magazine unless its direct subscriptions do maintain it. But when it is paying its way and so many in the profession want it, there seems no good reason why it should not continue.

The belief existed before it was founded that there was a distinct field for such a magazine. There was no magazine *from the profession to the public*. There are excellent magazines and brochures *from the practician to the layman*. These are all intended to tell the gospel of osteopathy to the sick—what osteopathy treats and cures and how it does it. These have a splendid place to fill and have splendidly filled it. But the profession—is there no osteopathic profession? And has it no message to the public? If so, where is its mouth-piece? Are our interests all centered in practice-building? And are organizations and institutions maintained only to contribute to this end? Is it not due ourselves and due the

public that the professional side be set forth? Is there no message we wish to send of what the profession stands for in this day when all public-spirited people are interested and uniting in bettering social conditions? What can represent the profession in libraries, what may be sent to public men whose influence we hope to secure?

This, in part, was the field the *Osteopathic Magazine* was intended to fill. If at present the magazine is not filling it, let us give our attention to this end of it, and not content ourselves with denying that such a field exists. It was never intended that the magazine would displace any other literature because it is not similar to any other literature. We know of no magazine which, with a comparatively limited field, has made for itself a place so soon. Its object is purely educational; it proposes to keep entirely clear of the field of practice-building and deal entirely with the professional side, giving the public the right viewpoint of osteopathy as a profession, and the publishers in becoming sponsors for such a magazine are no more commercial than they are in publishing the JOURNAL of the A. O. A. One is for the education of the public, the other for the education of the profession.

As to the Press Bureau, many subscriptions were made for its support at the Kirksville meeting. The supposition was that these would be continued following the Philadelphia meeting. Perhaps the financial conditions caused some to fail to renew. Others fail to support it because in many sections of the country the newspapers have flatly refused to print anything the Press Bureau prepares and furnishes. Perhaps many more feel that it is no more their duty than it is the duty of others around them to contribute to work which benefits all alike. And their refusal to support it by direct contributions clearly shows that it cannot be supported in this manner.

Letters from hundreds of members indicate that they have the impression that they must choose between maintaining the Press Bureau or the *Magazine;* the one is pitted against the other, and the member chooses the one which he has been able to make most use of and suggests the retiring of the other. This is an entirely wrong conclusion because the facts upon which it is based are not facts at all. We assume that few seriously object to the publication of the magazine, whether they care for it or not, if it is no expense to the association, if those who think they can make use of it for the good of osteopathy wish to pay its bills. Now as to the Press Bureau, it cannot produce financial returns and many residing in sections where as yet the Bureau has been able to get little results are not enthusiastic over the Association supporting it. Hence the need of an adjustment of its support whereby those states which can make most use of it should pay in proportion, and sections where less has been accomplished by the Press Bureau pay correspondingly little. Then in consideration of the fact that the effect of proper publicity is not all local, but contributes to the advantage of osteopathic practice everywhere, it would seem that the A. O. A. should pay a part of the total cost of the Bureau work.

If these statements are accepted as facts there is no reason why any one should feel that he must choose between the Press Bureau and the *Osteopathic Magazine.* There is no reason why we should not have both, as neither interferes financially with the other. With the *Magazine* suspended, there would be no more money for the Press Bureau and the money now paid or to be paid for Press Bureau work would not be diverted to the *Magazine* use, with the Press Bureau suspended, because, as we understand the Board, there is no intention of subsidizing the magazine after giving it a trial, which, as shown above, has been successful. The *Magazine* and the Bureau have distinct fields, and the two, together

with the splendid literature already in use, make an excellent propaganda equipment.

Now are we ready to put into effective operation the suggestion made in the JOURNAL two and a half years ago? We must consider it as a fact that we cannot support the Press Bureau, or any other such institution permanently, upon a basis of voluntary contributions from the membership. Before the next annual meeting a definite plan should be worked out for the Press Bureau and each state and larger local organization should agree to provide from its funds a sum based on its membership and the value to them of the Press Bureau work. If this is done, perhaps from the A. O. A. treasury, an amount can be appropriated which will enable us to realize the possibilities of this splendid work.

Dependent on voluntary contributions, it can never be sustained because it is on a false basis. Nor is it right that it be made entirely a charge upon the national organization. The national organization might direct its work and perhaps pay 50 per cent. of the expense, and the remainder, if properly adjusted, could be borne without the least hardship.

PUBLICITY NOTES

In connection with the above it is urged that each organization, state, district and local, appoint its publicity officer as was requested by the convention at Philadelphia. If this officer has been appointed please notify the A. O. A. secretary. If he has not been appointed it should be attended to at once. There is much important work now for him to do, not only in creating interest in our Publicity Department but in placing in libraries matter which is now ready for them. Give this your early attention.

The State Society of Vermont appreciates the value of the *Osteopathic Magazine* in the public libraries. This organization paid for a copy of the *Magazine* for every library in the State the first year and has recently renewed the subscriptions for the second year. This is splendid work and it should spread to other States. As has been mentioned many times, one can find nothing regarding osteopathy in most libraries and reading rooms. The *Magazine* is a good representative. Some of the other booklets would also do good work, and the book by Dr. Woodall soon to be offered, "Osteopathy, the Science of Healing by Adjustment," is prepared especially for this purpose. G. V. Webster, Carthage, N. Y., has a little book, "Concerning Osteopathy," which sells for 50c. paper, 75c. cloth. This is also good material for this purpose and should be placed in public libraries and reading rooms.

Many libraries in the larger cities have a directory department. In these a Directory of the A. O. A. members would do excellent work. It would materially increase the standing of osteopathy, minimize the likelihood of those interested falling into the hands of fakers and increase the value of A. O. A. membership, if the directory were placed in a great number of these libraries.

THE A. O. A. AND THE PROFESSION

When the 1914 Directory appeared the JOURNAL discussed under this caption the growth of the practice of osteopathy as represented in its national organization. A comparison as to the advancement, or the lack of it, should be made by the members each year and the directory furnishes a good opportunity. In this discussion, therefore, only the material and numerical phase will be considered.

The fact must be clearly kept in mind that as a system of practice osteopathy can not develop and advance without organization. If there be those who feel that they get little returns from their affiliation with the organization, they are reaping wonderful

harvests in the standing and character which the practice of osteopathy has secured, which could not have been attained but for the fact that sufficient number of the profession united to make a profession out of the practice. None identified with the practice will ever repay those who made of us a profession by organizing and maintaining this organization until it was able to stand alone.

At no period in recent years have business conditions been so unsettled generally over the country as through the past six months, and osteopathic physicians have felt this no doubt as keenly as any others. Notwithstanding this fact, the proportion of lapses from membership has been considerably below the average of recent years, and within the past two months the number of new members is 50 per cent. ahead of the record of a year ago, which up to that time had been our banner year.

These figures give great encouragement. They show the loyalty of the membership to the organization, and they further show the recognition of the position of leadership of the association by those in the profession hitherto not identified with it. The real encouragement is that it shows a keen interest in osteopathy by those practicing it. There is more of the old-time earnestness and enthusiasm than has been manifested in recent years. The loss of that enthusiasm was the thing which the advancement of osteopathy had to fear. It was natural enough in the early days that the fewness of our numbers and the perils besetting us should bring about a remarkable support of the organization from the practicians. To sustain that interest until numbers should become sufficient to maintain a strong organization, with the growing indifference which inevitably would follow, was the problem for the past few years. Our growth in the two most recent years indicates that this danger is happily passing.

And yet it has not passed, and even if the danger point had passed, our efficiency demands a still larger organization. As pointed out many times, our fixed charges are practically the same for 3,500 or 5,000 members. With the increased membership we should have a much larger income to use, not for expenses, but for actual increased efficiency of direct value to every member. Hence the appeal to the membership in its own behalf to increase the numbers of those participating in our organized work. No institution can be more mutual than the A. O. A., and the dues of all new members greatly increase the value of membership to all members.

Not only have the members proved their loyalty by retaining their membership, and hundreds of others have demonstrated their co-operation by becoming members, but the JOURNAL advertising pages are more attractive to advertisers and more productive as revenue producers. The increase in advertising patronage, as well as the favor with which it is looked upon by the advertiser, is striking when we consider the amount of advertising that has been withdrawn from the average magazine and newspaper. The authoritative statement is made that many of the larger magazines are running at an actual loss on account of the withdrawal of advertising, due to present business depression, and the probable suspension of many of the smaller ones is predicted if the same business conditions continue. Several metropolitan Sunday newspapers, it is said, are published at an actual loss of several thousand dollars each issue because of shrinkage in advertising. Under these conditions the Association and profession are to be congratulated, and with the aid of the membership along the lines suggested in these columns in the January issue our income can be still greatly increased and or prestige equally enhanced.

THE A. T. STILL RESEARCH INSTITUTE GRADUATE CLINIC

The plans for the Graduate Clinic are being carefully made. The prospects for good work are very bright at this time, judging especially by the character of the osteopathic physicians who have written of their intention to be with us at that time.

The purpose of the general clinics, in charge of osteopaths who are known to be especially skillful in the recognition and correction of bony lesions, and in general diagnosis, is to bring out clearly the best methods of handling ordinary patients. The laboratory methods suited to each case—blood, urine, gastric, sputum and other examinations, X-ray photographs, etc.—will be made the basis of instruction in laboratory methods; the significance of the findings will be discussed.

The Clinics in Diseases of the Ear, Nose and Throat, in charge of J. Deason, assisted by H. A. Wendorff, will include the examination and treatment of these diseases. Correct methods of treating Catarrhal Deafness will receive especial attention. Special dissections and Applied Anatomy of the structures concerned in these diseases, by A. Hollands and specially prepared X-ray plates by Dr. Collins, will give a sound basis for this instruction. Those taking this work will be expected to treat clinic patients under the direct supervision of Dr. Deason and Dr. Wendorff. Lectures covering the subject in a systematic way will also be given by Dr. Deason.

The Clinics in Functional Nervous Diseases will be in charge of Louisa Burns. The diagnosis and treatment of those neurasthenic and hysterical states which border upon insanity are made the subject of special study. The methods will be illustrated by clinic patients, demonstrated by laboratory methods, and explained by lectures.

The laboratories will be freely used in the diagnosis of patients in all clinics. Drs. Burns, H. L. Collins, Laura Deason, Hollands, Nicholson, and Wendorff will be in charge of the laboratories at different times.

Those who desire to devote time to laboratory technique will receive personal instruction. The hours will be arranged according to mutual convenience. There will be no extra charge for any instruction given.

The course as arranged contemplates four weeks' work, from April 6 to April 30. Tuition fee, $50. See fuller announcement in last A. O. A. JOURNAL.

LOUISA BURNS, D. O., *Dean.*

OSTEOPATHY DAY AT THE EXPOSITION

At the request of the A. O. A. the Panama Exposition authorities have set apart Tuesday, August 10, as Osteopathy Day at the Fair. This will be the week following the meeting in Portland, which will give those who attend this meeting ample opportunity to reach San Francisco in time to be present at the exercises to be held in the convention hall that day.

Many will recall the splendid exercises held at St. Louis in 1904 and at the Jamestown Exposition in 1907. The Publicity Department will arrange appropriate exercises and a splendid opportunity for publicity is offered.

RESIGNATION OF DR. CRAIG

I. F. Craig, who was elected Secretary of the A. O. A. at the Philadelphia meeting and has done the office work of the Association very acceptably the past six months, resigned to re-enter practice February 1, and has located in Kansas City, Mo.

W. S. Nicholl, of Philadelphia, the assistant secretary, declining to succeed to the office, being unwilling to give up his practice, the Board of Trustees has designated H. L. Chiles to conduct the work as acting Secretary until the annual election.

Departments

TECHNIQUE

CARL P. MCCONNELL, D. O., *Editor*
Chicago

A living mechanism is far different than an inanimate mechanism. Too many osteopaths, as well as surgeons, have been dominated by the idea that man is a machine, simply an assembly of constituent parts. This is shown in instances where one may really be an artist, or brilliant technician, in the mechanical sense, and still lose sight of what is of more fundamental importance, the vital mechanism of life. The parts of the bodily organism make up a "unified whole." which means that they are "reciprocally conditioned;" which is not true of a mere machine, for here man conditions the parts—a vast difference.

The reciprocal conditioning is of the utmost practical importance. In our technique, for example, the mechanism of the spine is reciprocally conditioned, in both part and whole, by various lesions, muscular and interosseous. This is shown by both functional and organic curvatures and only in lesser degree (although it may be of more serious import) by so-termed isolated or single lesions. Nothing could more clearly illustrate the significance of this fundamental principle than changes occurring in both pelvis and spine, from a rotation between fifth lumbar and sacrum. Arising from this, there may be distorsion of pelvis simulating primary innominate lesions, and more or less functional disturbance of the spinal curves. Herein is clearly shown the unified whole of the life organism upon the mechanical plane. Technique can not represent merely a tightening of a screw here or the adjustment of a journal box somewhere else, but in additoin a study of the case from the reciprocally conditioning vital viewpoint. However, this does not preclude the important fact that the readjustment of the lesioned parts should not be accomplished in a scientific (precise) manner.

Another common illustration, and one brought home to every day experience is the development of a scoliosis from a viscious posture. School children, as every one knows, are prone to this. Habitual faulty posture, most noticeable in one growing rapidly, and, also, wherein the lime salts may not be up to normal, is almost certain to create a distorted mechanism. One feature of the spinal mechanism will make the point clear—the combined side-bending and rotation which occur synchronously, and which are certain reciprocally to condition other units of the bodily mechanism. All of this is closely linked with race, development, health and nutrition of the unified whole. In a mere machine the only possible reciprocal conditioning would of necessity come from without.

Also, take the slumped condition, so noticeable in everyday practice, wherein the dorso-lumbar curves become merged into a common posterior bend, a return to the infant type (and not infrequently in the life history of the case has there been anything else). Here, in addition to the above, the lower ribs will be too oblique, the abdomen pendulous, the pelvis wrongly tilted, perhaps weak feet, round shoulders will be evident, flat upper chest, an ewe neck, etc. All of this is a mechanical reciprocal conditioning that soon compromises the vigor and health of the individual. Intestinal stasis, more or less disturbed functioning of all the abdominal and pelvic organs, limited excursions of the diaphragm resulting in vitiated and shallow breathing, and impairment of orifices of the naso-pharynx are all probable results. At the present moment our literature contains much that pertains to disorders of the upper air passages. Here is one causative factor that should not be overlooked—a probable baggy and boggy soft palate and its reciprocal influences arising from a slumped bodily condition. Isolated osteopathic lesions may be either cause or effect, and it requires no little diagnostic acumen and experience to unravel the pathologic chain. And a technique, both general and specific, coupled with thorough intelligent co-operation of the patient is demanded in order to secure therapeutic results. But the point here, we wish to make, is the reciprocal conditioning upon the mechanical plane of the life mechanism can only be understood by interpreting the plan of the unified whole.

Just as important from the standpoint of physiology is the reciprocal conditioning of the body from the standpoint of chemical co-ordination. (Note Abderhalden's "Defensive Ferments.")

Dr. Edythe Ashmore in recent issues of the *Journal of Osteopathy* has emphasized the importance of a technique that reduces the fatigue problem to a minimum. This is a problem of far more than passing interest. In fact, it strikes at the very root of practical therapeutics. We refer to the matter of fatigue to the practician, although it should be understood that a technique that universally fatigues the patient should also be taboo. Too many of our practitioners have broken down under the strain of a heavy practice. Of course, there is a limit of healthful endurance in any line of work, still there is something radically wrong with a technique that under ordinary circumstances unduly fatigues one. Dr. Still is a living example, and a case without parallel, of one who has not only withstood the possibilities of over-exhaustion from a very heavy practice, but in addition being the discoverer of the system, one would naturally think the drain upon the original experimenter would be far above the average. It would seem that his followers have not always thoroughly grasped the significance of his work.

I well recall that during my apprenticeship under several of the old-time operators, how foolishly exhausting and cumbersome some of the old methods were, and I may add without the least fear of contradiction that many of the

present-day methods are just as atrocious. To my personal knowledge the Old Doctor never taught a laborious method. And one of his daily concerns was the trying out of some new technique that would not only be effective therapeutically, but easy on the practitioner. He constantly realized the danger and absurdity of routine measures and was forever after the student who habitually fell into this line of least resistance. After all, this line of least resistance is only easy from an intellectual point, but far from it physically and in effectiveness of results. The very essence of osteopathic technique is an individualized adjustment from the patient's standpoint. Routine measures really signify but little from the osteopathic concept.

One of Dr. Ashmore's concerns is the developing of a technique that will be easy for the woman practitioner. And this by the way has always been a matter of great interest to Dr. Still.* There is no reason whatever why this can not be accomplished. At the present moment I can name several women who have a very large practice, get good results, and enjoy the best of health. They have discovered the master-key to technique—skill. The only possible advantage that a man can have over a woman physically is endurance, and no doubt in the average instance in the long run this is an advantage. After one has attained a reasonable skill in technique and a large practice is forthcoming endurance must be reckoned with. But this has nothing to do with skill judiciously exercised. Upon the other hand it has everything to do with a continuously successful practice over a period of years if one is not conservative of his strength.

Skill in technique, like skill in golf or baseball or acrobatics, is not a matter of tremendous strength, far from it. Strength that endures is desirable (we are speaking of the average strength in the healthy body), but spurts and fits and starts are ignorant expenditures. Skill in physical endeavors is not all physical strength, far from it, but rather an intelligent co-operation of the mental and physical, really more of the former than the latter. This drives the point right back to one's conception of osteopathy. And if he has not the anatomical, physiological and pathological knowledge, in the individual case, to actualize the osteopathic concept, his technique can not be skillful. A knowledge of osteopathic applied anatomy and physiology is the first requisite; next the ability to both experience and reason it out on the patient; then practice will soon develop the required skill.

A skilled operator is constantly changing his tactics, because he is constantly learning. Dr. Still has repeatedly said there are many ways to set a lesion. Every practitioner of real experience will agree with him. A routine groove or a cul-de-sac are the things to avoid. They are deadly intellectually and of comparatively little use physically.

In thinking of therapeutic skill the really essential factors that come first to mind, are knowledge and judgment of life processes; the art or dexterity to perform, although concomitant, is necessarily subservient. The art alone would relegate the act or process to simple technical ability, akin to merely assembling the parts. Naturally a superior technical skill postulates a thorough knowledge of the sciences upon which the technical judgment is based. Consequently in the broader sense, the ability to perceive and perform premises knowledge of both the science and art. Surgical skill is not simply a good technique, but in addition good judgment. Likewise in osteopathic technique the actual dexterity and its application is simply a means to an end. Basic to it all should be a thorough understanding of the principles of health. There is no royal road; study and experience are the necessary requirements.

To return to the subject of Women in Osteopathy, I have been interested in Dr. Ashmore's handling of the matter. With characteristic scientific acumen she goes immediately to the core of the problem, how to simplify, render more easy and make more effective the present-day technique. After all, this is the essence of the whole matter, for if our technique can not be so evolved and modified that the average student can not become skilled, with a minimum of exertion and fatigue, osteopathy will indeed be a sorry plight. No doubt this problem requires, in fact, demands, our earnest attention. It must be approached from many angles and most careful study given to it. It is far from being a one-man or one-woman problem. The mechanical and the mathematical sides have barely been approached; a tabulation of the frequency factor will reveal a mine of information (Dr. Still has repeatedly spoken and written of this); severity and length of treatment are in the scientific sense negative features, and only by a study of the entire problem will this ignorant complex be removed; research in spinal column physiology will assuredly reap a rich harvest; and analysis of well kept case records will be equally instructive. These are just a few suggestions to show how much we are in need of correlated and symmetrized data bearing upon technique.

A dozen or fifteen years ago our literature contained several articles on Woman and Osteopathy. Some of them, after the old-fashioned Independence Day orator, told us what a glorious thing it is for woman to engage in the osteopathic field, for here she can truly enter her own legitimate

* Dr. Still says in his Autobiography: "To me they (women) have proven that if man is the head of the family, his claim to superiority must be in the strength of his muscles and not the brain.

"The women have done well in the classes, clinics, and practice, and are as well worthy diplomas as any man who ever entered the portals of the American School of Osteopathy."

baliwick and minister to her suffering sisters with a sympathetic understanding, which, of course, no mere man can appreciate, and similar bosh.

But for some time I have been surprised that the subject of woman in osteopathy has not been "discovered" from an entirely different viewpoint, and in my opinion, a very legitimate one too. A few very disjointed and fragmentary points may be of interest, for as we shall see, they bear upon our general subject.

The three chief objections to women, in so far as their equality to man is concerned, are stature, brains and sex. Quite an array to be sure, but let us see what a little reflection will bring forth. It is a well-known fact that an individual of medium stature has far more endurance than one of large stature. And so far as brains are concerned, Aristotle, Alexander the Great, Horace, Montaigne, Spinoza, Erasmus, Charles Lamb, Keats, Balzac, to name only a few, were men of small stature. No one who has given the matter any thought will question for a moment that the relation of stature and brains is worthy of any objection. We have already committed ourselves a short space back upon the subject of endurance (this should not be confused with resistance), physically, in woman. Part of this may be due to lack of physical training, which, of course, can readily be overcome in the individual. But there is the anatomical build, the relatively instable pelvis in particular, that is a matter of sex. This is the only qualification, its physical reciprocation to other parts of the body as well as its physiology, that need be seriously considered.

In the matter of brains, history is replete with a refutation to this objection. From the Lesbian Sappho and Aspasia (Plato's Republic mentions the "equality of woman with man") and Cornelia, the wife of Pompey, Aurelia the mother of Julius Cæsar, all, women of great influence, to such women as St. Hildegard, abbess of convent of St. Rupert at Bingen, Elizabeth Barrett Browning and Bronte sisters, and in science Miss Carolin Herschel and Madame Curie, to barely mention a scattered few, can there be any question of brains? A still more foolish objection has been the one of the size of brain. To thoroughly answer this, one need only mention that the Laplanders are credited with the largest sized brains of any European tribe or race. A personal visit to Lapland some years ago, more than satisfied me that the actual size of the brain has little to do with mentality.

Really the gist of the objections arises in the matter of custom, public opinion and law. To this one may add lack of discipline. If one will stop and analyze these factors, considerable enlightenment will be forthcoming.

No doubt, in the medical field, women are coming into their own. Mythology gave them a great start, for it will be recalled all six daughters of Aesculapius were not only goddesses, but also medical mistresses, among them Hygeia, goddess of health, and Panacea, restorer of health, after impairment and loss. It is not now commonly known that during the Middle Ages a very fair degree of hygienic and sanitary measures was in vogue. And the care and attention of the sick, very frequently, and, in many localities almost altogether, rested upon the wife and daughter of the Seigneur. In many instances the convents and monasteries were almost models from a hygienic standpoint.

The subject of the equality of woman seems to have always been a live topic. We have mentioned Plato's Republic. Moliere facetiously says:

"No,
It isn't decent, and for many reasons,
That woman should study and know too much.
To teach her children what is right and wrong,
Manage her household, oversee her servants,
And keep expenses within bounds, should be
Her only study and philosophy." Etc.

Here is a paragraph from John Stuart Mill's, "The Subjection of women": Like the French compared with the English, the Irish with the Swiss, the Greeks or Italians compared with the German races, so women compared with men may be found, on the average, to do the same things with some variety in the particular kind of excellence. But that they would do them fully as well, on the whole, if their education and cultivation were adapted to correcting instead of aggravating the infirmities incident to their temperament, I see not the smallest reason to doubt." And probably it may be further said what our pampered civilization and environment does not thoroughly complete certain of the so-called "finishing schools" do. Many of the objections that bear upon winsomeness, etc., are sentimental gush, pure and simple. With the same percentage from time immemorial, why should not Mendelian principles work the same in one sex as another? Then aside from the features, we have barely sketched, why should not environment and discipline overcome any possible shortcomings?

In a roundabout and very hasty manner, we come back to the starting point—skill in technique. "Applied art is merely a method, a manipulation —an application of knowledge, not knowledge itself,—a power, but not a creative power." Then first, we need far more knowledge of the laws of the human body; but above these laws an understanding that there are no lines of demarcation in nature; then we will begin to appreciate what a unified whole is, and that it is reciprocally conditioned. With this understanding skill in technique, by practice, will surely come; and it will not be a question of stature or strength or sex, but an application of knowledge.

Technique, a means to an end, simply follows one's conception of etiologic and pathologic forces. To rely on either soft tissue lesions or interosseous lesions per se invalidates the postulate that the mechanism is a unified whole, and,

therefore, reciprocally conditioned. The source of the lesion may be either from the soft tissues or interosseous branches, more often the two combined. Likewise the technique will naturally be an art, a manipulative interpretation of these forces. Otherwise, the modus operandi will be more or less a tilt at windmills.

There are many ways to correct an interosseous lesion the same as there are several ways to relax soft tissues preparatory to the deeper adjustment work. It matters little how the leverage is secured, provided it does not unduly tire the patient or operator. Localization and ease of the leverage is the first step toward efficiency and skill. Too much of our work, with all of us, is superfluous, and hence bunglesome, with a tremendous loss of worse than dissipated energy.

Some understanding of mechanics and dynamics in both their physical and physiological interpretations is necessary. Then a technique will gradually be evolved suitable to both the individual operator and the individual patient. Approaching the problem on this basis will go a long way in developing originality with a consequent minimizing of imitative and routine measures.

It matters but little how relaxation and separation of the anchored lesioned parts is obtained, just so long as it is accomplished with due regard to the above essential qualifying factors.

In the next number, we will consider some methods that have proven effective in the hands of different practitioners. It is only by analysis and correlation of several measures and their consequent adaptation by the operator, that one can develop his technique ability.

14 W. Washington St.

CLINICAL DEPARTMENT

Kendall L. Achorn, D. O., *Editor*
Boston.

OSTEOPATHIC TECHNIQUE

O. C. Foreman, A. S. O., '16

Since coming to the A. S. O., the subject of Osteopathic Technique has been the one thing foremost in my thoughts, and I have observed with interest the work, or rather the results of the teachings of this subject here. Before coming to the school, I had become interested in osteopathy through the demonstration of its merits by Dr. Joseph H. Sullivan, whom you all recognize as one of the earliest and best and most successful operators in the field. I had had treatments for several years and was greatly pleased with his easy manner of operation, and the absolute lack of anything painful or unpleasant. You may imagine my surprise, when I began receiving treatments here by the seniors, to have pop after pop; in fact, it seemed to me that their whole object in treating was to get the "pop." I had never heard of such a thing, and couldn't understand where they had received their instruction. Experience with some of the faculty taught me that even some of them did a little "popping"; others more. Naturally, I was interested and anxious to get to that point where I should be taught technique, in order to see the reasons for the point of view and the object of the performance. But, during my first three semesters at school, the department of technique has undergone a change of management, and I believe that now the A. S. O. has solved the problem in a logical way. As you are interested in hearing an expression regarding the new manner in which technique is being taught here, I shall do my best to tell it to you. Not that it is in my mind that better operators are going to be turned out than ever before, because that rests entirely upon the man himself; but I honestly believe that the science is being presented in a most logical way and if the students are not equipped before leaving here, it will be because of their own lack of effort and not because of the department.

A classmate tells me that the other day he was examined by an upper classman. The senior remarked, "Why, here's a lesion." My classmate then asked, "What kind? Is it a flexion lesion, or an extension? Side bending-rotation or rotation-side-bending?" The answer received was that the operator didn't know, and all that could be said was that there was a lesion, because there was a restricted motion in the articulation. I believe the senior who examined this fellow is a representative of his class, though I may be mistaken. I, myself, have had upper classmen ask me: "What's that difference between a side bend rotation and a rotation side bend? It doesn't seem to me to be any difference."

Dr. Edythe Ashmore, in her introduction to our class, made the statement that she would attempt to make us see a reason "why" for doing anything that she gave us. There must be a reason, other than just to correct the lesion. The first idea is to find out what caused the lesion, and the correction is immediately suggested. If it is a sidebend-rotation to the left, then sidebend-rotation to the right is the corrective principle; or if it is a flexion (posterior) lesion, then extension is immediately suggested. This constitutes diagnosis. In preparing us for the corrective movements which she has given us so far, we had several weeks of "Lovett's' Spinal Curvatures," studying the mechanics of the spine, and the extent of the various movements.

In explaining to our worthy upper classmen the difference between a sidebend-rotation lesion and a rotation-sidebend lesion, in the dorsal region, we said: In the sidebend-rotation lesion, the sidebending is the primary movement, and the rotation is secondary. Due to the fact that the spine is comparable to a flexible rod bent in two planes, we cannot have one movement (sidebending) without the other (rotation). The function of the dorsal region in the upright position is rotation and nothing else. Therefore, it is impossible

for us to have a sidebend-rotation in that position. In the extended position of the spine, the dorsals are locked, and no sidebending can be had in that position, and rotation is limited to the two or three lower vertebrae, so it remains that flexion with the spines unlocked, is the only position in which sidebending-rotation is to be had. This knowledge immediately fixes a method of correction when the lesion is recognized.

In a rotation sidebending (the sidebending is of very slight degree and coming secondary) the spine of the vertebra is to the side of the convexity, and the body has rotated to the concavity. The posterior rib and high side will be on the side of the concavity. The ribs are approximated on the side of the concavity, and there is restricted motion. The ribs are separated on the convex side.

In flexion, sidebending being the primary movement and rotation secondary. The body of the vertebra is carried to the side of the convexity and the spine to the side of the concavity. The posterior rib or high side will be on the side of the convexity, and the ribs approximated on the concavity, with the separation on the side of the convexity.

The mere recognition of the lesion as restricted motion and a spinous process being out of alignment doesn't indicate the method of correction, for we wouldn't correct a sidebend-rotation with a rotation-sidebend movement, or vice-versa.

This is but a faint effort to give you an idea of the method of diagnosing, and what is being attempted in the way of teaching "specific lesion" osteopathy here at school. The following corrective movements illustrate the correction of the two lesions mentioned.

Rotation-sidebending lesion, 1st to 4th dorsal. Patient lies on side of concavity, spinous process pointing upward. Rotate patient's face slightly to side of spinous process (influencing the primary movement of rotation). Using the thumb, bring leverage against the spinous process by pushing downward. Sidebend as secondary movement. Carry the sidebending a little farther than normal to make correction.

Sidebend-rotation about 7th Dorsal. Patient on stool. Flex patient, with arms crossed. Head resting on arms, with face turned to concavity. (The side upon which the spinous process now is). Knee on the convex side, or side upon which the body has rotated and is the high side, put arm under patient's axilla, and grasp opposite crossed arm. With other hand pull the spinous process to the side of the convexity, and sidebend the patient to the convexity.

I might add that the post graduates and upper classmen who attend the classes of Dr. Ashmore are most enthusiastic regarding the work, and can speak only in the highest praise. Dr. Ashmore is attempting to put system into the teaching of technique, and teach the science, allowing the "art" to follow. We must admit that art is only accomplished by practice and if we get the science well founded within us, the art is bound to develop. And while I say we have the best of instruction, I again, acknowledge that I do not intend to say that the best operators will come from my class, because, as I said before, it all depends upon the fellow himself.

This department will be very glad to hear from all of the schools in regard to the clinical work and the work in technic.

DISAGREEABLE REACTION FROM MISAPPLIED TREATMENT

Apropos of the discussion upon the above subject in this department in November, Frank H. Smith, D. O., Kokomo, Ind., writes:

I have been very much interested in the symposium on "reactions from treatment." All of our conclusions are necessarily personal opinions, not necessarily therefore correct, for any one person's experience is limited. But it seemed to me that Dr. Helmer stated the case correctly when he said something like this: "Disagreeable reactions follow error in diagnosis, or overtreatment."

Our judgment as to the amount and severity of treatment must necessarily come through a varied experience; but when a man interprets a slight lameness or soreness following the first two or three treatments to be too great a reaction, I believe he is in error as much so as it would to say to a man who has undertaken calisthenic exercises for the first time and who experiences soreness and lameness. "You have had too great a reaction from those exercises and should not take them in that way again," when, as a matter of fact, he has simply used a group of muscles unaccustomed to exercise, and by following up the exercise this will pass. I do not believe in being harsh in our treatment; neither do I believe we should always sacrifice results for the entire comfort of the patient, when it is necessary to make an adjustment. Usually adjustment can be made painlessly and easily if we follow the simple rule to secure complete relaxation of the lesioned articulation before making our thrust, or movement for adjustment. Most of the complaint from harsh treatment comes from a neglect of this simple rule.

When, however, an osteopath assumes that because a patient who fails to return after the first treatment, has had too harsh treatment, I believe he is in error. I believe I have had an equal number of patients who gave as their reason for failure to return for treatment of other osteopaths—that the treatment received was too light, that it failed to accomplish anything more than massage would have done, and that when they go to an osteopath for treatment, they go for osteopathy, not massage. Somewhere between these too extremes should be our objective. As Dr. Bill Smith used to say, "Get your knowledge of anatomy and physiology and then apply your horse sense." We are all learning every day how

to graduate the treatment to suit the patient's condition, using more preparation of the field in our neurotic cases, but not failing in our ultimate purpose to adjust the lesion whether it be bony, ligamentous, or muscular. For osteopathy is essentially that treatment which "adjusts" structure.

Just a word on the much maligned subject of the "pop" in treatment. To make myself clear to start with, we are all, I take it, opposed to that treatment which has for its objective the pop alone. And when treatment is given with that object in view, it simply separates joints which usually are already freely movable. But when the treatment is specific, and your spine is locked above and below the lesioned articulation to prevent using force where not needed—then I believe the securing of a "pop" at this lesioned articulation is evidence of a separation of the articular surfaces of the lesioned articulation. This is the first step in all bony adjustment, namely the separation of the articular surfaces, which enables the operator to make his adjustment to the normal position of the lesioned articulation if it be malplaced, or enables him to secure normal motion if the lesion be a rigid articulation.

Now lest I be misunderstood, I do not say that the "pop" is necessarily the first step in adjustment; but I do say that the separation of the articular surfaces is, and that this separation is often and I think usually accompanied by the "pop." To say, therefore, that an operator is mistreating because he produces a "pop," is incorrect. But if we get this "pop" in separating the articular surfaces of the lesioned articulation as a step in our adjustment technic, we have no better evidence of that separation than the "pop." But to say that this rather than the adjustment of the tissue is the object of treatment is a misstatement. Is it not probable, then, that our difference in technic is responsible for some of our criticisms of each other? *Success in results attained must be the ultimate measure by which we condemn or praise a man's work.*

R. C. McCaughan, D. O., Kokomo, Ind., writes:

The subject of "reaction" following treatment needs, above all things, definition. Different writers discussing the subject are talking about entirely different conditions. Before any very helpful discussion may be had we must know just what we mean by "reaction."

A recent article in the JOURNAL of the A. O. A. on this subject, although not giving a definite statement as to what was meant by reaction, left the idea that reaction is an unfavorable result following adjustment of a bony lesion. Such reaction was described as involving a feeling of depression, chills, a low grade of temperature above normal, with possibly a slight headache. These reactions are described as following the treatment on about the third or fourth day, or at a later period in about ten to fourteen days. No statement is made as to the effect on heart rate, blood pressure, and so forth.

In last month's issue of the JOURNAL the discussion of "reaction" makes it plain that the idea of all the writers is that soreness and lameness of the patient and tired feeling of the next day constitute the reaction under consideration. This seems to be the idea of most practitioners.

Dozens of other kinds of reactions to treatment might be mentioned. The dilation of the pupil on the vigorous manipulation of the upper dorsal segements is one. It is short lived but very definite. Sweating during a treatment, especially in acute cases, is very often a reaction from a very definite type of manipulation.

In Dr. Deason's experiments in Kirksville, we were able to increase the flow of urine decidedly with fixation and manipulation in the proper area, but very shortly after the cessation of the manipulation the flow returned to the original rate.

These are immediate reactions and osteopathy would be in poor shape to handle acute cases if such reactions could not be produced.

Most of the reactions of soreness and lameness are from injudicious or unskilled treatment, or from resistance on the part of a patient to a treatment that gives him some acute pain. Especially do the reactions of fatigue come from these errors. Lesions must be reduced and we cannot always wait a long time to adjust them, in the hope of avoiding all pain and soreness on the part of the patient. Would you, in the case of an innominate lesion produced in the last few hours, wait for several days before effecting a reduction, just to give the inflammation a chance to subside; or would you reduce the trouble at once and prevent the organization of the exudates into adhesions that will have to be broken up? You would reduce the trouble at once in spite of the reaction.

We cannot base a proper technic on the patient's judgment as to just how much or what style of treatment is right for him. His judgment is not competent and we have no right to his case if we deviate from the treatment he needs and give him what he wants.

To conclude: The fact that certain crude methods of manipulation produce lameness and drive the patient away from osteopathy is beside the point. We have agreed on that long ago. Such conclusion does not aid us in considering the subject of right or wrong reactions, or definite kinds, to properly executed osteopathic methods.

In a lecture on "Reactions and Their Significance" delivered at the Chicago College of Osteopathy, Orren E. Smith, D. O., Indianapolis, said:

"There is one method for determining the frequency and strength of treatments that is proving to be very reliable in practice, and that is to watch the functional reactions produced each time from correction of structure. If we inquire each time the patient comes in for treatment, as to the reactions produced by the previous treatment, it is possible by this method to

keep a proper balance between structural adjustment and functional reaction. If the physiological balance between structure and function varies too far from the normal, it is an easy matter to decrease the amount of adjustment until function again normalizes.

"It is not until several years of actual experience in the field that the physician's judgment becomes ripened and matured in regard to maintaining a normal balance between structure and function.

"During the transitional stage of structural adjustment there is more or less disagreeable functional reaction, and as it is impossible to avoid a certain amount of such unfavorable reaction, it is best to explain this fact to the patient at the time the examination is made. Thus fortified, it will be possible to enable the patient to understand the cause of many unpleasant reactions and get his co-operation at these critical times when it is most needed."

Dr. Smith further said: In regard to frequency and strength of treatment it may be said that as the profession grows older there is a tendency among many physicians to give less treatment—to decrease the length of each treatment, and to increase the time between treatments. The specific treatment is becoming more popular each year, with the more experienced physicians, because their technique in correcting lesions is improving, and the reaction from adjustment of the single lesion is less pronounced than from the correction of a number of lesions at a single treatment. Actual experience in the field modifies the early conception of technique, and enables the physician to correct, with more ease to himself and less pain to the patient, all structural abnormalities that are amenable to treatment, so that in time it becomes possible for him to correct the lesion much faster than function will normalize to the structural change, and for this reason it becomes advisable to increase the length of time between treatments."

It cannot be denied, however, that many physicians are giving short treatments without increasing the time between treatments, in order to make more money, while in reality the good of the patient demands longer treatment each time treated, and longer time between treatments. Many patients have lesions of long standing and it is absolutely impossible to do corrective work on such lesions without some preparatory treatment preceding adjustment. Preparatory treatment of the field in lesion cannot be given by short treatments, because pathological tissue will not yield to abrupt, harsh treatment. Adjustment of structure is necessarily more vigorous than preparatory treatment, and has considerable element of coercion in it; while preparatory treatment is considerate and persuasive rather than compulsory. In order to be successful in administering preparatory treatment it is necessary to decrease tissue irritability and this cannot be done rapidly.

The harsh, abrupt adjustment of structure that has been in a pathological state for a long period of time, causing extensive deviation in the tissues from their normal position, is followed by very unpleasant and in some cases dangerous structural and functional reactions, where no attention is given to preparing the tissues previous to adjustment. To give such patients a violent wrench or twist of the spinal joints, with a poke in the ribs, will not correct long-standing joints, but will produce congestion of the spinal cord segments and greatly increase functional reactions, leaving the patient in worse condition than when he began treatment.

It is equally derogatory to the physician to treat so lightly and so inefficiently that he can treat the patient every day or every other day without producing sufficient reaction to make such a course impossible. In the latter case the patient finds at the end of a long course of treatment that he is only temporarily better, and that in order to feel well he would have to keep up such treatment indefinitely.

(This department is at all times open to discussion of subjects of clinical interest to osteopaths. Description of osteopathic technic and the application of technic to particular cases are especially desired. Address communications to the editor of this department, 687 Boylston Street, Boston.)

Correspondence

RE-DISCOVERING OSTEOPATHIC LESIONS

Can any good come out of Kirksville? This modern therapeutic paraphrase of the question that once was asked about the "Great Physician" is uttered with no less scorn than was its original. But the modern questioner for the most part has not accepted the answer "Come and see." He must have the answer delivered in his own country, and medical fields, for to him osteopathy offered only pretense of claims without scientific foundation. Therefore, it had no truth and no standing.

It is interesting, therefore, to see from time to time the satisfied ones announcing the results of their own experiments and thus willingly or unwillingly corroborating the contention at the basis of our osteopathic theory in diagnosis, symptomatology and prognosis. It is far more interesting for us to know that these medical brethren have finally "arrived" than to engage them in a discussion of priority of discovery.

There recently have come to my attention some statements bearing on this point, and I venture to refer to them in the hope that they may prove of interest to some of your readers who may not have chanced to see them. They are good "talking points."

One of the most significant statements is quoted by Willard in the December, 1914, number

of the *Philadelphia Journal of Osteopathy,* from the preface to Volume 1 of Practical Treatment (Musser and Keller, University of Penn.)

"* * * In a word, we find that the old school practitioner is endeavoring to establish in place of the ancient empirical system of drug-dosing, a modern, rational one based upon intra-corporeal activities, i. e., based upon the same ground principles that underlie the practice of osteopathy. Needless to say, this is a belated recognition on the part of medical practice, of the merits of physiological methods of treatment. Leaders of medical thought have from the beginning bitterly and vehemently opposed all drugless systems of treatment. And it is only after osteopathy has had its system of physiological therapeutics in successful operation for twenty years, and medical men have thereby found themselves forced to it, that medical practice has come to advocate the general acceptance of the principles of cure first enunciated by Dr. Still."

In an article entitled, "Subluxations of the Atlas upon the Axis" (*Am. Jr. of Orthopedic Surgery,* Dec., 1914), Ogilvy in the study of forty-seven cases classifies the displacement in three groups on the following planes: the horizontal, the horizontal and vertical, and on the same plane with the atlas but with rotation around the axis. He further points out that "a sudden jar or jolt may produce the injury; pressure symptoms may be slight, delayed for weeks or days or absent altogether." In the same number of this journal Griffith refers to two cases of this condition in which he followed Dr. Walton's method of reduction and treatment with success.

We should remember that the significance of these procedures to the medical fraternity was considered sufficient to warrant publication in their appropriate journal. Osteopathically the reduction of upper cervical lesions is, of course, a matter of daily routine. But the other fellow who doubted is beginning to find it out for himself.

Wouldn't it be interesting, Mr. Editor, if, for instance, we could find the time and place of departure from the idea of the immobility of the sacro-iliac articulation? Of course, we know that there wasn't a text book on anatomy published much over a quarter of a century ago that would say that this joint was movable. We know, too, that while the texts were denying the existence of motion there and Goldthwait was claiming priority of discovery, Doctor Still and his pupils were reducing "Slipped innominates" as another routine measure.

And here again the medical men—and they are of varying degrees of skepticism—are proving the truth of our teaching. Not long ago a medical friend told me that he had seen a wonderful set of radiographs made by a colleague that proved to his entire satisfaction the existence of this lesion. These plates were made by a radiographer in the Middle West.

In Montreal, Forbes, of the Children's Memorial Hospital, in an article on "Sciatic Pains" (*N. Y. Med. Jr.,* Nov. 28, 1914), says: "So often indeed has this associated rheumatoid condition been found that I have been forced to conclude that the so-called rheumatoid diseases, as classified by Dr. Goldthwait, of Boston, are usually the cause of sciatic pains." This classification is hypertrophic, atrophic, infectious and gout. In conclusion Forbes remarks, "I would accentuate the following facts," and places this as the pertinent one: "In the majority of patients suffering from sciatic pains examined by me, a primary lesion has been found in the spine or sacro-iliac joints." Thanks, doctor, we can subscribe to that statement!

Continuing this wide, geographic distribution of reports, Ogilvy (New York) gives some very interesting data on "Backache" and makes a plea for more careful examination of children. (*N. Y. Med. Jr.,* Dec. 5, 1914). The article is of interest, considered osteopathically. Referring to sacro-iliac strain, he says, "Another common cause of backache in adolescence is sacro-iliac joint strain. The pain in these cases is referred directly to a point over the sacro-iliac joint. Here is marked tenderness on pressure over the joint, and this tenderness is limited to this area. Patients will sometimes complain of pain running down the thighs, and a wrong diagnosis of sciatica is often made. In addition to the pain and tenderness, an examination will reveal a lateral deviation of the spine toward the affected side, if it is a unilateral strain."

The author then cites his own case of sacro-iliac strain produced by cranking an automobile, and states that he found the patient "still stooping over, supporting himself with his hands upon his hips, with a lateral deviation of the spine toward the right side. A felt pad was placed over the sacrum and the pelvis was firmly strapped by adhesive plaster two inches wide. This gave immediate relief, although he was still unable to stand perfectly erect. The following day he still complained of some pain, and two days later, upon rising suddenly from his chair, felt something slip with an audible click, after which he had considerably more comfort and was able to stand erect without effort."

The *Philadelphia Journal of Osteopathy,* in its December, 1914, issue, refers in a pertinent editorial to the "Medical Recognition of the Osteopathic Lesion," and quotes at length from the medical writers named therein.

Other readers will doubtless be able to supplement instances of further corroboration by medical men of these and other lesions that were discovered and reduced first by osteopathic measures.

Why may we not use these additional proofs of our contention of the existence of these lesions in our conversation with the skeptical ones who may consult us for the first time and who not unnaturally, with preconceived ideas from experience with medical men, have little faith in our

osteopathic statement of the case? Personally, I know that it can be done with good results.

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"TWILIGHT SLEEP"

It has been with amazement that I have read and heard the not at all unfavorable comments of our osteopathic magazines and osteopaths on "Twilight Sleep." To me it sounds as if the interdiction of the A. M. A. and American M. D.'s has been the bugle call for our (osteopathic) support. All of the articles I have read on "Twilight Sleep" savor of "Made in Germany."

These are, in my opinion, the most important phases of the question. Scopolamin is the active principal of Scopola Carniolica ($C_{17}H_{23}NO_4$) an alkaloid apparently identical with Hyoscin. It is used in conjunction with morphin and introduced intramuscularly. Can we countenance the administration of a drug as harmful as hyoscin and given in conjunction with morphia, whose terrible slaves we meet every day? Let us treat the cause in these cases. If an unstable nervous system occasions more pain or exaggerates it, let us treat the nervous system and not the pain.

The answer to the following question, to me says, use or not to use: *Will the Organism Respond to an Emergency Call When Under the Influence of a Hypnotic, Sedative and Narcotic* (not mentioning mydriatic and anodyne)? Undoubtedly it will not, as the functional activity is decreased I fail to see the logic and be able to agree with the author of the article in the A. O. A. Journal, which says, "The anesthetic can be harmlessly administered and is a wonderful help to nervous mothers."[1] In an unstable nervous system there is already a lack of coordination of functional activity and by decreasing it you surely could not expect to assist an organism which needs all possible assistance to perform its function. What proof have we that these same cases could not have been delivered with a minimum of pain, in a shorter period under proper osteopathic treatment.

To complete the logic of this article, I will refer to an editorial in the *Jour. A. M. A.*[2] We, of course, must take into consideration that Epinrphrin at present is what may be almost termed a "Cure All" among the medical profession, but being a physiologic secretion of the adrenals, it should be given due attention as such.

In what is termed as the "heroic" mode of experimentation, of the administration of considerable doses of the active agent of the adrenals, these prompt physiologic results are secured. A cessation of the activities of the alimentary canal; a notable shifting of the circulation from the great vessels of the abdomen to the lungs, heart, limbs, and central nervous system, frequently manifesting itself further in a rise in peripheral arterial pressure; an increased cardiac vigor; and an augmentation of the sugar content of the blood. These changes are also caused by nervous discharges along sympathetic pathways; discharges such as are sent forth in crises of pain and great emotion. Furthermore, the adrenal medulla is subject to central nervous influences coming to it by way of the splanchnics, the artificial stimulation of which will induce a secretory activity with resultant increase of epinephrin in the blood.

W. B. Cannon, of Harvard Medical School, has offered an ingenious interpretation of the service which the adrenals may render to the organism, —an emergency function, as he terms it.[3] He says these changes noted above, i. e., changes in circulation, hyperglycemia, etc., occur when fear, rage or pain causes the adrenal glands to pour forth an excessive secretion.

Muscles work preferably by utilizing the available carbohydrate of the organism. Great muscular activity considerably reduces the quantity of stored glycogen and of circulating sugar. The outpouring of sugar which is attendant on the major emotions and physical pain and which leads to hyperglycemia may be interpreted as a biologic adaptation to the necessities of struggle, fighting or flight (or other muscular exertion). The epinephrin, which we now know is set free by pain and by fear and rage, would put the muscles of the body unqualifiedly under the control of the nervous system; for precisely as removal of the adrenals has a well known debilitating effect on the musclar system, injections of their secretory products act as an invigorator.

But how is the musculature of an organ to be put under the control of a nervous system which is under the control of a narcotic?

Epinephrin prepares fatigued muscles for better response to nervous impulses sent forth in great excitement.[4] This provision, together with the hyperglycemia due to the epinephrin, would give to an individual in which these mechanisms are most efficient the best possible conditions for putting forth supreme muscular efforts.

Is this not what occurs at delivery?

More recently, Cannon and Mendenhall[5] have noted that emotional excitement occasions rapid clotting of blood. This may properly be associated with a discharge of epinephrin, which also has been shown[6] to hasten clotting.[7] This phenomenon of the blood may also be regarded as an adaptive process, useful to the organism. Prompt clot formation tends to conserve blood by sealing opened vessels in the injury which may accompany pain. Such considerations help to round out Cannon's hypothesis of the emergency function of the adrenals. As Cannon says, each of these changes in the body is directly serviceable in rendering the organism more efficient in the struggle which fear, rage or pain may involve; for fear and rage are organic pre-

parations for action, and pain is the most powerful stimulus to supreme exertion.

Is this not the picture of child-birth.

Let us lend a hand to Eugenics and teach our expectant mothers how to care for themselves. Ignorance, to me, seems to have been the largest factor in causing her present condition.

X. Y. Z.

1. Smith. The Twilight Sleep, Jour. A. O. A., Vol. XIV, No. 2, 97.
2. Editorial. Newer Views of Functions of the Adrenals, *Jour. A. M. A.*, Vol. LXIII, 4, 322.
3. Cannon. The Emergency Function of the Adrenal Medulla in Pain and Major Emotions, *Am. Jour. Physiol.*, 1914, XXXIII, 356.
4. Gruber. The Fatigue Threshold as Affected by Adrena lin and by Increased Arterial Pressure, *Am. Jour. Physiol.*, 1914, XXXIII, 335.
5. Cannon and Mendenhall. Factors Affecting the Coagulation Time of Blood, IV. The Hastening of Coagulation in Pain or Emotional Excitement, *Am. Jour. Physiol.*, 1914, XXXIV, 251.
6. Cannon and Gray. Factors Affecting the Coagulation Time of the Blood, II. The Hastening or Retarding of Coagulation by Adrenal in Injections, *Am. Jour. Physiol.*, 1914. 232.
7. Sajous. Internal Secretions and principals of Medicine, Vol. 11, 1176.

TREATMENT OF SOME EYE CONDITIONS

In reply to your inquiry will say that at the Massachusetts meeting I discussed a procedure that I saw the Old Doctor use for a case of partial blindness last spring when on a visit to Kirksville, and I have used it in a number of cases with remarkable results.

The Old Doctor claimed in the case he had treated that the upper lid had became contracted and pressed upon the eye-ball, forcing it back into the socket, thereby cutting off the blood supply to and from the eye-ball and its coverings. The method used to overcome this is to lubricate the index finger, insert it under the upper lid, holding on the outside with the thumb. This gives you a firm grip on the lid and you can pull it away from the nose carefully but firmly, then from the outside edge where the most contraction is found; then pull it out from above along the whole course of the lid. The process takes about a minute and breaks up the small adhesions in the muscles of the eye-lid, taking all of the pressure off of the ball. If carefully done, this will have to be done but once.

The lesions in the neck should be all straightened out, special attention being paid to the occiput and the fifth cervical and second dorsal.

I have been able by this method to clear up numerous cases which showed very little improvement under the ordinary method of treatment. I have cleaned up cases of cataract, one case of partially detached retina, and numerous other cases.

How much this treatment can accomplish I do not know, but that it is of sound osteopathic principle and practical is clear to the most casual observer. I got it directly from the dear Old Doctor, who knows more than all the rest of us put together, God bless him! It has been a wonderful help to me, and I am sure if you will use it, it will be helpful to you.

C. E. Farnum, D. O.

Newport, R. I.

WOMEN'S DEPARTMENT

Our attention has been called to the outline of work of the General Federation of Women's Clubs, which was published in the January Journal. In this outline, medical inspection of school children is advocated under the section of Anti-Tuberculosis. Comment was intended at this time upon the fact that while we can not endorse medical inspection of school children, we do advocate physical inspection of school children.

Josephine L. Peirce, D. O., *Chairman.*

State and Local Societies

Arkansas—The Board of Osteopathic Examiners met at Little Rock in the offices of the President, Grace Whallon, February 2, at which time five applicants wrote on the examination. Four of this number passed the required average of 85 per cent. with no branch below 75 per cent.

The Board discussed reciprocal measures with other states and since the Arkansas Osteopathic Law does not provide for or against reciprocity it was decided to request the Attorney General for an opinion on the matter; if in his judgment the law permits of reciprocal relations, the Secretary was instructed to establish reciprocity with other states of equal requirements, that cared to return the courtesy.

Other boards interested in reciprocity with Arkansas will please take up the question of such relations.—Chas. A. Champlin, D. O., *Sec.-Treas.*, Hope, Ark.

Colorado—The seventeenth annual meeting of the State Association was held in Denver January 18th and 19th. Among the features of the program were discussion of "Touch and Technique in the Correction of Cervical Lesions," by A. L. McKenzie, Dean, Central College, Kansas City; "Adhered Prepuce, Cause and Effect as Related to Nervous and Mental Diseases," U. S. G. Bowersox, Longmont; Pediatrics: "Pneumonia in Children" Mary N. Keeler, Loveland; "Prophylaxis and General Care of Children." Cara S. Richards, Denver; "Weak Features in the Osteopathic Profession, with a Practical Way of Overcoming Them," A. L. McKenzie.

R. Kendrick Smith, Boston, lectured in Boulder to a good audience, and at the evening session Asa Willard, Missoula, Mont., Chairman A. O. A. Legislative Committee, addressed the meeting in Denver on the legislative work.

At the second day's session R. K. Smith, Director of the A. O. A. Press Bureau, discussed the "Technique of Publicity," and Asa Willard discussed "The Legal Status of Osteopathy in Colorado"; discussion by H. G. DeTienne, Pueblo.

At the afternoon session a "Better Baby Contest" was held under the direction of Jenette H. Bolles, at which thirty-six babies were measured, most of them receiving a thorough osteopathic examination.

R. K. Smith discussed "Scoliosis, and Structural and Functional Alterations of the Spine"; he also demonstrated the Edwards technique for catarrhal deafness on several clinics. At the evening session Dr. Smith lectured at the Women's Club on the osteopathic conquest of disease to an audience of 700 people and made a most favorable impression by his dignified presentation of the subject.

At the close of the meeting resolutions were adopted favoring working for an Independent Board of Osteopathic Examiners. Following this the election of officers took place with the following results:

President, U. S. G. Bowersox, of Longmont; First Vice-President, H. G. DeTienne, of Pueblo; Second Vice-President, Mary N. Keeler, of Loveland; Secretary, M. A. Morrison, of Denver; Assistant Secretary, W. R. Benson, of Longmont; Treasurer, F. A. Luedicke, of Denver; Auditor, D. L. Clark, of Denver.—MARTHA A. MORRISON, D. O., *Secretary.*

Illinois—The Chicago Society held its regular meeting February 4th, when a movement was started urging the street car companies to provide seats sufficient at least for their women passengers, it being maintained that many injuries are sustained by them in hanging to the straps.

Kentucky—At a meeting in the Auditorium of the Seelbach Hotel of Louisville on January 13th R. Kendrick Smith, Boston, Director of the A. O. A. Press Bureau, discussed health matters before a large and intelligent audience. The speaker was introduced by Rev. Charles Hemphill of the Presbyterian Theological Seminary.

Maryland—The Baltimore Osteopathic Faculty was addressed by H. V. Carter of that city, subject "Causes of Epidemics in the City Schools." Other discussions followed and clinic cases were presented.

Massachusetts—The Boston Osteopathic Society met on January 23rd when C. D. Thore was the chief speaker and discussed "Tic Douloureux and Facial Neuralgia." Earle Scamman discussed "Obesity and Its Treatment" and George W. Reid, Worcester, discussed "Rib Lesions" and demonstrated correction. The society is reported to be in a flourishing condition and applications for membership are being received at each meeting.

Michigan—R. K. Smith, Boston, was the guest of the Detroit society on January 21st, and before a large audience in the Y. M. C. A. hall discussed "The Conquest of Disease."

Missouri—R. Kendrick Smith, of Boston, addressed the City Club of St. Louis on "Civic Problems in Constructive Health." In the evening he spoke at the Buckingham Hotel at a dinner tendered him by the St. Louis Society.

AT KANSAS CITY on the following evening he was the guest of the Northwest Missouri Association at the Hotel Baltimore and gave his public lecture "The Conquest of Disease."

THE ST. LOUIS ASSOCIATION met in the Warwick Hotel January 27th when a general discussion of difficult cases met with in practice was indulged in.

At the same place on February 16th the regular meeting was held, preceded by dinner. Clinic was conducted by J. J. Beckham, followed by a paper by Mary E. Cummerford, subject "Suggestive Therapeutics." W. D. Dobson is President and Caroline L. Weber Secretary of the organization.

THE MISSOURI STATE ASSOCIATION and the Kansas State Association will hold a joint session in the Coates House, Kansas City, Mo., May 13th, 14th and 15th. Among the subjects and participants on the program are: "Sex Hygiene," I. L. James, Springfield; "Surgical Clinics"; G. W. Conley, Kansas City; "Joint Troubles," illustrated with stereopticon, G. M. Laughlin; "Diseases of Heart and Lungs," L. von H. Gerdine, Kirksville; "Catarrhal Deafness," J. D. Edwards, St. Louis; "Profession Needs," F. P. Walker, St. Joseph; "The Progress of Osteopathy," R. W. Bell, Independence, Kan.; "Heredity vs. Environment in Diagnosis," E. A. Moore, Belleville, Kan.; "Some Practical Experiences," J. W. Swart, Kansas City, Kan.; "Far Reaching Effects of Innominate Lesions," Ethel L. Burner, Bloomington, Ill.

"Better Babies" will be discussed by Jenette H. Bolles, of Denver, and a Better Baby Contest will be conducted by Drs. Livingstone, Leinbach and Bolles.

"Acute Diseases" will be discussed by C. W. Johnson, Des Moines; "Emanation and Polarity of Human Energy," E. M. Perdue; "Research Discoveries in Physiology," Alma Kinney, Kansas City; "More Brass Tacks," Nelle Ferry, Nevada; "Therapeutic Exercises," demonstrated, M. C. Craig; "Practical Points Concerning Metabolism," A. Still Craig, Kansas City.

C. B. Atzen, Omaha; J. Deason and H. S. Bunting, Chicago, will also address the meeting on subjects to be announced later.—R. H. WILLIAMS, D. O., *Chairman Program Committee.*

New Jersey—Regular meeting of New Jersey Society was held in Y. W. C. A. Bldg., Monday,

January 9th. Francis A. Finnerty, Montclair, discussed "The Value of Serial Radiography in Gastro-Intestinal Diagnosis." R. M. Colborn is President, and J. C. Burnett, Secretary of the organization.

New York—The New York State Society will hold its annual meeting in Albany March 6th at Hotel Ten Eyck. An excellent program has been arranged and an unusually helpful meeting is anticipated.

THE NEW YORK CITY SOCIETY will hold its February meeting on the 20th at the Osteopathic Clinic, 35 E. 32nd Street. Frank M. Vaughan, Boston, will discuss "Clinical Pathology" and Lester R. Whitaker, Winchester, Mass., will present "Spinal Mechanics" with demonstration of technique.

Ohio—The Miami Valley Society held its regular meeting in Cincinnati January 21st, when the following officers were elected: President, Clara Wernicke; Vice-President, John Swanson; Secretary and Treasurer, Carrie E. Moores.

"The Diagnostic Value of Pain" was discussed by Eliza Edwards, and "Migraine" by Clara D. McKinney.—CARRIE E. MOORES, D. O., *Sec'y.*

Oregon—The annual meeting of the Portland Osteopathic Association was held January 19th and officers were elected as follows: President, Katherine S. Myers; Vice-President, H. P. Bloxham; Secretary, H. L. Barrett; Treasurer, L. H. Howland; Trustee, H. L. Lacy. W. G. Keller was made chairman of the Program Committee and H. P. Bloxham chairman of the Publicity Committee.

The society decided to meet semi-monthly instead of monthly from now until the time of the A. O. A. convention.

Eight candidates for osteopathic license went before the recent session of the Board and all were successful.

Pennsylvania—At the meeting of the Philadelphia County Society, held February 6th, Julia E. Foster, of Butler, Pa., was the guest of honor and gave an address. "The Sympathetic Nervous System." H. L. Chiles, of Orange, N. J., was also present and briefly discussed the association work. S. P. Ross, President of the local society, presided.

Virginia—The campaign for local organization being carried on by the Publicity Bureau of the Virginia Osteopathic Society is meeting with a hearty response. Two-thirds of the State now is organized in locals with monthly meetings, whereas three months ago these same osteopaths never "got together" except at State meetings, and then only semi-annually.

The latest district organization reported to the Bureau is the Central Virginia Society organized at Richmond and reporting the following list of officers: President, H. S. Beckler, Staunton; Vice-President, H. H. Bell, Petersburg; Secretary, H. F. Calisch, Richmond; Treasurer, W. D. Bowen, Richmond.

This association embraces several counties and includes the cities of Richmond, Petersburg, and Staunton. Meetings are monthly on the third Saturday.

At the last meeting held in Richmond on February 13th, Dr. Wilson, recently of Chicago, contributed to the program with a clinic on the Edwards Method of treating Catarrhal Deafness.—M. L. RICHARDSON, D. O., *Manager Press Bureau.*

Washington—The Western Washington Branch of the Woman's Bureau of Public Health Department, of which Grace Stott Wilkes is President and Minnie Potter Secretary, is doing splendid work.

At the February meeting of the King County Association William E. Waldo gave an address on "Causes and Treatment of Asthma" and James T. Slaughter discussed "Cirrhosis of the Liver."

Notes and Personals

Favorable Decision—The State Board of Medical Examiners of New Jersey, which had given three sessions to taking testimony in the complaint of the irregulars of the State on the failure of the board to recognize the "New Jersey College of Osteopathy," decided at the end of the last hearing that the "college" was no college at all and that its graduates were not entitled to recognition under the osteopathic provision of the law. This had been the former ruling of the board on the recommendations of D. Webb Granberry, its osteopathic representative, and the hearings were had on mandamus proceedings compelling the board as a whole to decide the question. The hearings consisted of taking testimony which enabled the board to compare the course given by the "college" with the standard required by the A. O. A. for a recognized college. With this before it, the board appeared to have had no trouble in coming to a decision.

Irregulars Make Trouble—The organization of irregular osteopaths of Pennsylvania have made good their threat to make trouble if any move was made against them, by attacking the charter of the Philadelphia College of Osteopathy on some technicality. Suit is being brought by the attorney general and it is not known yet whether there will be any effect upon the future of that institution.

Frank Admissions—One Dr. Calwell, secretary of the Council of Medical Education of the A. M. A., recently gave public lectures in New York City, in which he maintained that all authority in medical education and health matters should be centered at Washington, with a secretary in the President's cabinet. *The Evening Post* comments very pointedly on these propositions and states that as long as doctors are not agreed as to the cause and treatment of disease,

that they had better be kept out of positions of Federal authority. *The Post* notes the earnestness of Dr. Wiley for daily examinations of all school children, and of Health Officer Goldwater, of New York City, for the forcible examination of every citizen in the city and State once a year to pass upon his health. In this connection the recent declaration of Dr. Osler is quoted, that the State should take rigid control of the consumptives for the reason that an "examination with the aid of radium and the microscope would probably reveal that at least ninety per cent. of our population has tuberculosis to some degree in one form or another."

The following quotation is from *The Wisconsin*, commenting on the *Post* article:

"Would the country be healthier and happier with so much official supervision and compulsion? Would anybody be benefited except the doctors holding government jobs? Would even the doctors be happy—dependent as they would be upon political "pull" instead of professional proficiency for their positions?

"It will be a sad day for everybody when, if ever this country surrenders itself to federal paternalism to the extent which the dogmatists and extremists advocating a government department of medicine desire."

Small Percentage Members—Dr. Wende, President of the New York State Medical Society, recently made an address in Brooklyn, in which he bemoaned the fact that in New York county only forty-six per cent. of the physicians belonged to the county society, while in Norway, ninety-five per cent. of the physicians belong to the national organization. He urged upon the physicians that they get into politics and elect those to office known to be favorable to them. It may be that if the medical organizations kept out of politics and gave their attention to professional advancement that more of their number would be affiliated in their organizations.

Which Ranks First?—Some feeling has been created recently by the claims of the Germans as to the service they have rendered the advancement of medicine and surgery, easily claiming first place for themselves. The English authorities have taken this up and denied that, with the exception of Ehrlich, that any German in the present generation has contributed materially to the advance of medicine and surgery. They claim that the Germans are very busy creating drug preparations and cure-alls, but that few of them have amounted to anything.

Doctor Punished—Ernest A. Codman, a prominent surgeon of Boston, has been forced out of the chairmanship of the surgical section of the Suffolk District Medical Society because he cartooned the "Harvard Medical Ring" before a recent meeting of the society. President Lowell, of Harvard University, as well as the Harvard Medical School and the Massachusetts General Hospital, all received attention in the doctor's cartoon, as he charged that there was a ring which encouraged surgical operations, declaring that it was "easier to remove the appendix than it was to determine before the operation whether there was anything really the matter with that organ." For a good many years, the charge has been pretty generally made that "ring" conditions existed in Boston medical and surgical practice, but Dr. Codman appears to have been too specific and carried his statements too far for him to be tolerated.

Objection By M. D.'s—The allopaths of St. Louis unintentionally gave osteopathy good publicity recently. When R. Kendrick Smith, of Boston, was publicly announced as lecturer for the Northwestern Missouri Osteopathic Society, the City Club of St. Louis, invited him to address them at their regular noon dinner. The president of the American Medical Association had spoken to them a few weeks before. Dr. Smith accepted the invitation and the City Club sent out its regular announcements of his address. This was followed by a registration of protests by allopathic members of the City Club, who objected to the Club placing its stamp of approval upon osteopathy. The City Club overruled these protests and Dr. Smith's address was delivered. The St. Louis newspapers made quite a sensation out of the protest, publishing it with large headlines.

The most interesting result was an editorial in the *St. Louis Times*, which concluded with this sentence: "Osteopathy is a science touching the body's bony structure. The bonehead objection to the Doc's appearance is proof that some of his hearers have much to learn from him."

Federal Anti-Drug Law—On March 1st, a new Federal law goes into effect regarding the sale, dispensing or giving away of opium or coca leaves and salts, derivatives or any preparations from them. The act provided that on and after the first day of March "Every person who produces, imports, etc., distributes or gives away opium or coca leaves or any compound thereof, shall register with the Collector of Internal Revenue of his district, his name, place of business, etc."

Inasmuch as some osteopaths may use cocaine or similar drugs as local anaesthetics, if they desire to continue such practice they should register and secure the Federal license as above indicated.

Not At A. S. O.—The St. Louis *Republic* of February 11, states that "a patient in the hospital at Kirksville, either fell or jumped from his window and was killed, and the body was not discovered until the next day." Dr. George A. Still calls attention to the fact that as the A. S. O. Hospital is well known over the country and probably no other in Kirksville is known to exist, it is fair to state that this accident did not happen at the A. S. O. Hospital, but at a small medical hospital in another part of the town. Dr. Still states that while not maintaining that such a

thing could not happen at the A. S. O. Hospital, that such a thing has never happened, and with twenty-nine nurses in attendance, he believes nothing of the kind will happen.

Wins His Suit—W. B. Linville, Middletown, Ohio, recently won a damage suit brought by a policeman who at one time was under Dr. Linville's care. The question in court turned on whether the fracture of the leg was produced by an injury or whether by the treatment administered. The family claimed that the man had rheumatism and that the fracture was caused by the treatment. Dr. Linville stated that the leg was fractured when the man came to him and he treated it as a fracture. The jury decided in favor of Dr. Linville, after a hotly contested trial, in which several M. D.'s appeared as expert witnesses.

Good Suggestion—Press Bureau suggests that you have your *Osteopathic Magazines* for the past year bound in cloth or leather, and present it to your local public library. This makes a volume of dignity which will interest general readers and often cause them to seek for further information.

Remained In Germany—Dr. Carrie S. Hibbard writes very interestingly from Münich, Bavaria, where she is located at Max Joseph Strasse 2/111. Her descriptions of Germany in state of war and of the Christmas season are exceedingly interesting.

So far as the JOURNAL records go, Dr. Hibbard is the only osteopathic physician to remain on the Continent. The Drs. Moellering are temporarily located at St. Paul, Minn., and Dr. E. C. White, recently of Paris, is now practicing in New York City. As noted recently, osteopathy seems to flourish in Great Britain in spite of war conditions.

Opens London Office—Dr. Harvey R. Foote, who with his wife has practiced a number of years at 71 Harcourt Street, Dublin, Ireland, has recently opened an office at Harewood House, Hanover Square, London, where he will be found Mondays, Tuesdays and Wednesdays of each week.

Good Work—Dr. Ella X. Quinn, St. Augustine, Fla., has a clinic at the State Deaf and Blind Institution two afternoons a week, where there are 150 unfortunate children, and is doing successful work. Would it not be possible for others of our members to gain entrance to such institutions in other States?

The Osteopathic Shoe—This has at last been perfected and put upon the market. The Public Health Department of the American Osteopathic Association, in co-operation with the largest manufacturers of women's shoes in the world, has perfected the Osteopathic Shoe which is now available under the trade mark name "Osteoplastic Shoe," and it is to be publicly advertised with the qualifying statement that it is an osteopathic shoe. Practitioners may prescribe this shoe and their prescriptions will be filled at any shoe stores which carry the "Queen Quality" shoes or the goods of Thomas G. Plant Co. When local dealers do not carry these lines, osteopaths' prescriptions, when accompanied with pencil tracing of feet, will be filled by R. Kendrick Smith, 19 Arlington Street, Boston. No orders from patients will be filled. The orders must come from osteopaths.

Personals—Uel Reynolds, recently of Bound Brook, N. J., left in the early winter for Europe, where he has engaged in Red Cross work with the Imperial British Guards.

A. M. Bolton, Jamestown, N. Dak., has been appointed to the Board of Osteopathic Examiners by the Governor of that State.

Dr. Mary E. Hard, treasurer of the newly organized Osteopathic Society of Detroit, recently entertained the Board of Trustees at her home, 355 West Grand Boulevard, Detroit.

Charles E. Still has resigned as Mayor of Kirksville, for the reason of his pressing business duties. He was recently re-elected Mayor under the commission form of government, and his resignation is generally regretted in the city.

Married—At the home of the bride, in Peoria, Ill., January 28th, Miss Ula E. Kemp to Dr. J. Edgar Olson, of Bushnell, Ill.

Born—To Dr. and Mrs. O. C. Robertson, of Owensboro, Ky., January 18th, a daughter. Dr. Robertson is the osteopathic member of the State Board of Health.

Died—At the home of her daughter, in Sioux Falls, So. Dak., January 29th, age 72, **Mrs. Katherine Hennessey,** mother of Dr. Clarke Francis Fletcher, of New York City.

At her home in Lebanon, Tenn., February 9th, **Mrs. N. B. Whiteside,** mother of Dr. Sunora L. Whiteside, of that city.

At her home in Detroit, Mich., January 18th, **Mrs. Ward A. Detwiler,** only sister of Dr. Warren B. Mack, of Lynn, Mass.

At her home in Peoria, Ill., after a brief illness, **Mrs. Minna Riker,** wife of Dr. G. L. Boyer, of Peoria, Ill. Mrs. Boyer had been ill but a few days, was in the hospital at the time, where it was ascertained that she had sustained an impacted fracture of the hip. She was apparently making good progress when seized with convulsions and died in a few minutes.

Besides her husband, she is survived by her mother and several brothers and sisters. Among a large circle of relatives are Drs. Cornelia Walker, New York City; Mary Harwood, Kansas City, and Mrs. S. A. Ellis, of Boston.

Dr. Charles E. Ross, of Ft. Scott, Ark., died on January 2nd, and the following resolutions were adopted by the State Board of Osteopathic Examiners in session February 2nd:

1. *Resolved,* That in the death of Charles E. Ross, the profession of Arkansas, has lost one

of its most enthusiastic supporters and one of its wisest counselors. He was one of the seven members who faced the strong medical organization of the State and succeeded without outside assistance in placing upon the statute books the present splendid law. He was a member of the the first state board and served as its secretary and was active and influential in organizing the profession of the State.

2. *Be it further resolved,* That while feeling sorely the loss to the profession we, in behalf of the profession, extend to his family our sincere sympathy, and incorporate this as a part of the minutes of this meeting, and direct that copies be sent our publications. The family has lost a devoted father, and we have lost a valued friend of tried loyalty and ability, whose memory we shall ever cherish.

Scientific Feeding—This is the subject of a useful work by Dora L. Roper, D. O., of Oakland. Calif. The work consists of about 275 pages and has gone through its second edition. Price, including postage, $1.75. It contains a study of food, its classification and functions, and gives menus, food requirements, with table of caloric values. About 500 receipts of cooked and raw foods are given with ninety menus for infants and children, also many menus for the aged and convalescent. family menus for the several seasons with directions for preparation of foods.

Splendid testimonials of the work have been received from physicians and food economists, as well as many teachers, magazines and newspapers. The book will be found useful both in the home and in the physician's office in indicating specific diet in given cases. Enclose $1.75 and order from the author, R. F. D. 1, Box 188, Oakland, Calif.

Helpful Reprints—Reprints for use with intelligent lay patients have been made of the very excellent article in this issue by Orren E. Smith. Those interested in securing the same, should correspond with the author.

Practice Wanted—Wanted. practice in a small town, 5,000 to 8,000, in Pennsylvania, either to buy or secure new location. I can aid osteopath to good location in Oklahoma. Address, Mc. W. A., c/o A. O. A. JOURNAL, Orange, N. J.

APPLICATIONS FOR MEMBERSHIP

ARKANSAS

Henke, Clara E. (A), 824 State Bank Bldg., Little Rock.

ARIZONA

Griffith, Hurwood W. (A), 223 N. Lecroux St., Flagstaff.
Reznikov, Anna (A), Sullivan St., Miami.
Pace, Garl H. (LA), St. Johns.
Stoner, A. B. (A), Chandler Court, Mesa.

CALIFORNIA

Bagley, Edwin F. (P), Marsh Strong Bldg., Los Angeles.
Boggess, Emma Bronk (A), 1664 Larkin St., San Francisco.
Bordsen, Theo. L. (LA), Alcatraz Blk., South Berkeley.
Bruce, Lewis (SS), Lindsay.
Farmer, G. C. (A), 424 S. Broadway, Los Angeles.
Greenwell, Geo. Hunter (LA), 121 Soquel Ave., Santa Cruz.
Hall, Mida M. (A), 115½ E. Chapman Ave., Orange.
Kimbley, Howard G. (LA), City of Paris Bldg., San Francisco.
Ludden, Raymond (A), 114 S. Brand Blvd., Glendale.
McMullen, Walter M. (P), 229 E. Commonwealth St., Fullerton.
Moreland, Cassie C. (LA), Bacon Bldg., Oakland.
Phelps, Fannie J., 1st Nat. Bank Bldg., Long Beach.
Polly, A. A. (A), L. B. Bank Bldg., Long Branch.
Ragland, Hugh S. (SS), San Fernando.
Reeks, Lloyd D. (LA), Bradbury Bldg., Los Angeles.
Rockwell, D. B. (SC), Ferguson Bldg., Los Angeles.
Ross, Annie McRobie (LA), Loring Bldg., Riverside.
Scott, George D. (A), 71 Waller St., San Francisco.
Sherwood, A. L. (LA), 205 N. C. St., Madera.
Sutton, Emilie Victoria (A), 1350 Sutter St., San Francisco.
Taylor, Leona (A), 2447 N. McCall Ave., Selma.
White, Frank J. (LA), Marshall Bldg., Redondo Beach.
Woodruff, Charles Homer (A), Richmond.

COLORADO

Cobb, H. M. (A), Genoa.
Hook, J. Henry (A), Palisade.
Kinney, Blanche E. (A), Salida.

CONNECTICUT

Campbell, Ida S. (PA), Manwaring Bldg., New London.

FLORIDA

Love, S. R. (A), 8 Pine St., DeLand.
Rowe, Eva Frances (SS), 109½ S. Olive St., W. Palm Beach.

GEORGIA

Fahrney, M. Sangree (Ph), 172 Capitol Ave., Atlanta.
Spitler, J. F. (A), Chronicle Bldg., Augusta.

IDAHO

Hiatt, E. C. (A), Payette.
Most, Louis H. (A), Monaghan Bldg., Coeur d' Alene.

ILLINOIS

Conard, S. E. (A), 1573 Charleston Ave., Matton.
Dressel, Walter S. (A), Kergher Bldg., Carrollton.
Hollands, Augustus (A), 122 S. Ashland Blvd., Chicago.
Maxwell, G. Edward (AC), 27 E. Monroe St., Chicago.
Miller, Harry T. (A), Hanlon Bldg., Canton.
Nicholson, F. M. (A), 122 S. Ashland Blvd., Chicago.
Scott, Emily Mode (P), 800 W. Gertrude St., Howard.
Snyder, B. J. (A), Box 577, Fulton.
Tuttle, Arthur H. (Cc), 1124 Central Ave., Wilmette.
Walker, Daisy E. (A), Mercantile Bldg., Quincy.
Wendorff, Herman A. (Ch), 122 S. Ashland Blvd., Chicago.
Willett, Nora E. (LA), Mercantile Blk., Aurora.

INDIANA

Stone, J. C. (A), Tipton.

IOWA

Chappell, E. E. (A), Clear Lake.
DeSart, Roy F. (SC), Commercial Bldg., Mason City.
Dewey, Nina Mason (SS), Utica Bldg., Des Moines.
Herrington, Ellen (DMS), 117½ S. Dubuque St., Iowa City.
Kline, D. M. (A), Malvern.
Olney, Belle H. (A), Ennis Bldg., Ottumwa.

KANSAS

Davis, James W. (A), Mayland Bldg., Girard.
Davis, Perry E. (A), Globe Bldg., Pittsburg.
Godfrey, Nancy J. (SC), Hilton.
Hancock, Ivy E. (DMS), cor. Myrtle & Penn Sts., Independence.
Hull, Wm. Philo (A), 5½ S. Jefferson St., Iola.
Pauls, Peter D. (A), 7 E. Seventh St., Lawrence.
Pooler, Cyrus P. (LA), cor. Blair & Broadway, Chapman.
Tunnell, H. E. (A), Clyde.

KENTUCKY

Oldham, W. H. (So), E. Main St., Elkton.
Slavin, J. L. (A), 214 N. Fourth St., Danville.
Stiles, J. A. (A), Cottingham Bldg., Morganfield.
Waller, Granville B. (A), 411 W. Chestnut St., Louisville.

LOUISIANA

Simpson, Willie Perry (SS), 212 Alabama Ave., Ruston.

MAINE

Kidder, Fdith Florence (A), 48 Clinton Ave., Waterville.
Kellett, M. Maude (A), 145 Hampshire St., Auburn.

MARYLAND

Stanley, Johnson J. (A), First Nat. Bank Bldg., Hagerstown.

MASSACHUSETTS

Allen, Horace P. (M), 15 Bicknell St., Dorchester.

Burke, Wilfrid I. (M), 311 Sun Bldg., Lowell.
Fessenden, Wendell W. (Mc), 244 Cabot St., Beverly.
Mason, J. Louise (LA), 183 Huntington Ave., Boston.

MICHIGAN

Garlinghouse, A. J. (A), 134½ Main St., Charlotte.
Hull, Ella (A), Coleman.

MINNESOTA

Alexander, George A. (A), Lock Box 6, Lynd.
Becker, Ethel L. (A), Preston.
Curtis, Jay L. (A), Fergus Falls.
Devitt, Delia E. (No), 1030 Nicolett Ave., Minneapolis.
Oliver, Clifford C. (ZA), Medical Blk., Minneapolis.

MISSOURI

Cameron, Edward M. (A), Richmond.
Cannon, P. J. (Ce), Farmington.
Farren, Mrs. M. E. (A), 715 W. Pierce St., Kirksville.
Gardner, William A. (A), 207 E. Harrison St., Kirksville.
Gobel, Bertha A. (A), 3646a Arsenal St., St. Louis.
Grow, Will W. (A), Logan Bldg., St. Joseph.
Hicks, Fred'k Thomas (A), Kirksville.
Mayo, Kathleen (A), Kirksville.
Pennock, P. H. (A), Plattsburg.
Schoenmaker, Amy B. (A), Wardell Bldg., Macon.
Whitmore, O. M. (A), Still-Hildreth San., Macon.

MONTANA

McFarland, Arthur H. (A), Coleman Bldg., Deer Lodge.
Rieger, Daisy Deane (A), 308 Stapleton Bldg., Billings.
Roseborough, A. L. (LA), 209 Third St., Anaconda.
Templeton, W. F. (LA), Bramble Blk., Havre.
Vredenburgh, N. E. (DMS), Forsythe.

NEBRASKA

Smith, J. G., Blair.

NEW YORK

Lincoln, Clara B. (A), 132 Fayne Ave., North Tonawanda.
Marshall, J. S. B. (A), 503 W. Third St., Jamestown.
Warburton, Otis C. (At), 56 Charlotte St., Rochester.

NEW MEXICO

Elmore, Nannie (A), Roth Blk., Raton.
Schwentker, Julius O. (A), N. T. Armijo Bldg., Albuquerque.

NORTH CAROLINA

Broadhurst, Lila M. (A), Goldsboro.
McClenny, D. Clayton (P), Hinton Bldg., Elizabeth City.

OHIO

Ballert, A. E., Jr. (A), Ohio Bldg., Toledo.
Flynn, J. P. (A), 255 E. Main St., Alliance.
Hazzard, Charles (A), 224 No. Fayette St., Washington.
Hiss, John M. (A), Harrison Bldg., Columbus.
Loose, E. Ellsworth (A), Niles Bldg., Findlay.
Yanders, H. H. (A), Nolle Bldg., Wooster.

OKLAHOMA

Chappell, W. F. (A), Surety Bldg., Muskogee.
Hedgpeth, Chas. E. (A), Sayre.
Mahaffay, Ira F. (A), Model Bldg., McAlester.
Rice, Helen Elizabeth (A), 301 W. Fourteenth St., Oklahoma City.
Shaw, Enos L. (A), Old Court House Bldg., Vinita.
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Barss, Emily Malcomson, from Masonic Temple to 211 N. Second St., Corvallis, Ore.
Bowers, Homer D., from Newberg to Gaston, Ore.
Brittain, Ethel, from Greensville, S. C., to St. James Bldg., Jacksonville, Fla.
Buckmaster, R. M., from Orlando to Whidden Bldg., Arcadia, Fla.
Buckner, Alice L., from Aurora to Fullerton, Neb.
Calisch, Harry F., from Point Pleasant, N. J., to Chamber of Commerce Bldg., Richmond, Va.
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Cocke, Herbert T., from Mineral Wells to Littlefield Bldg., Austin, Tex.
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Crow, Louise P., from 130 E Ave. 59 to 5311 Monte Vista St., Los Angeles, Calif.
Davis, F. C., from Guthrie to Tonkawa, Okla.
De Witt, Emma Good, from 30 to 277 Monument Ave., Wyoming, Pa.
De Wolf, Winifred, from 716 Cass Ave. to Fine Arts Bldg., Detroit, Mich.
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Hicks, Anna Louise, from Cambridge, Mass., to 743 Congress St., Portland, Me.
Howe, Delcran D., from Washington, D. C., to Guymon, Okla.
Kleist, Anna, from Manistee to P. O. Box 317, Richland Center, Mich.
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McKnight, Isadore, from Indianola to 305 N. Walnut St., Creston, Iowa.
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DOES IT NOT ENTHUSE YOU to see the new members come in? We never had so many in one month before. And the old members, in spite of hard times, have paid up like real men and women. As long as the Association has a steady growth from year to year the practice of osteopathy for the future is as sure as we can make it. Don't forget that.

NOW THESE NEW MEMBERS; did you interest one or more of them in the Association? If you did, thank you; if you did not, other opportunities are coming. Next month we will offer membership to July, 1916, for $5. That is the time when the applicant gets three or four months extra. Determine now to secure some friend for membership when that offer is open. Use the application blank we recently sent you, or ask us for another.

ABOUT PUBLICITY—we are working out some plans which are going to get results. We are soon going to have some real literature, prepared especially for library use. We want the list of libraries in which this literature can be placed. We want volunteers to see that this literature is placed in the libraries, and we want to get into touch with the publicity officer of every organization.

HAS YOUR ORGANIZATION, state or local, elected or appointed a publicity officer? If not, will you not take it up with the president of the society and ask that the officer be appointed? Take an interest in this important work, and the Association will do its part.

WE ARE WORKING now to put the Press Bureau Service on a sure and equitable basis. We want to make no more calls for individual contributions. On the other hand, it is not right and fair that your dues to the A. O. A. pay the entire expense—because some sections of this big country profit so much more by the Press Bureau work than others do. If each state and large district organization pays in proportion to its membership and to the value of the Press Bureau to it, and the A. O. A. pays, say, an equal amount, the distribution will be fair and it will be a burden to none. That can be worked out for the Bureau, we hope. But the Press Bureau Service merely lets people know that osteopathy is still alive; it brings it to the attention of new people all the time—and it greatly pleases us all when the papers publish something about our work.

WE MUST PREPARE TO EDUCATE the public after the Press Bureau has interested them. For years we have had some good magazines for this purpose. They are being added to all the time, both those brought out by individual publishers and those which the A. O. A. has produced. "Why I Go to the Osteopath" is a remarkable piece of osteopathic literature. Many osteopaths who first ordered a few hundred copies have re-ordered time and again. A few days ago a member of one of the largest publicity houses in New York ordered a few copies just to use as samples of brochures of first-class style. That much for the mechanical feature; but we like to speak of the compelling force of the story. It makes osteopathic converts. Is it making them for you? Give it a chance.

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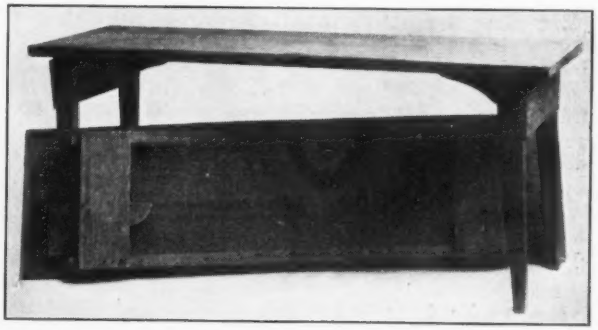

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—VIA—

Glacier National Park

The trip over the "See America First" route of the Great Northern Railway via Glacier National Park, between the Mississippi Valley and the Pacific Northwest—the route that is to be followed by the Chicago Great Western—Great Northern special train of the American Osteopathic Association to the Portland Convention—is one of the most interesting rides-by-rail in America. It's a route, by the way, that beginning with this year has been extended through to California through the placing in service between Portland via Astoria and San Francisco of the luxurious new express steamers, the "Great Northern" and the "Northern Pacific" of the Great Northern Pacific Steamship Company. Those Osteopaths who plan to return from Portland by way of the California Expositions very likely will desire to avail themselves of the fine sea voyage into San Francisco that is provided by these new ships.

At St. Paul and Minneapolis, the Great Northern Railway's transcontinental track begins—neighbor cities with a combined population of 600.000 spreading over 100 square miles on both banks of the Mississippi that are two gateways to the Great Northwest. The Great Northern's Stone Arch Bridge spans the river.

Across central Minnesota—from southeast to northwest—the Great Northern tracks follow through the Lake Park Region, where Minnesota's 10 000 "lakes of sky-blue water" of the by-gone Dakotahs are—a bountiful belt of the "Bread and Butter State." As Minnesota's border is neared, the Red River Valley is entered—the bed of glacial Lake Agassiz of the dim time after the Ice Age; during the past half-century famous for its "No. 1 Hard" wheat. At Moorhead (250 miles out from St. Paul) the Red River of the North, flowing to Hudson's Bay, is bridged.

Across the golden grain-carpeted prairies of North Dakota—from Fargo and Grand Forks on the Red River—the Great Northern makes almost straight westward. North Dakota has 70 000 farms, 100 000 "big red barns" and 2.000 huge grain elevators. It's really one vast farm of 45,000,000 acres.

At Williston (606 miles out.) close to North Dakota's western edge, the track sets a course along the north bank of the Upper Missouri River—the "Big Muddy"—in the old steamboat days the route of many big boats bound from St. Louis to Fort Benton, laden for the military posts and the Helena "diggings."

At Mondak (629 miles) the Great Northern enters Montana.

So big a State is Montana—only Texas and California are bigger—that 685 miles of the Great Northern's rails are necessary to the crossing of it.

For the first four hundred miles of this distance the track is laid across the high plains of northern Montana; that as they outstretch westward gently rise from an altitude of 1,900 feet at the Dakota line to one of 3,700 feet at the foothills. The ride across Montana's wide plains—where vast sweeps of open country everywhere meet the eye, and the sunshine-saturated, clean air is glorious—is a novel one. These plains—today fast developing into an agricultural empire—are rich in romance; much stirring Indian-fighting took place hereabouts in frontier days, and later on this was the land of the Montana long-horn and the cowboy. Cabins and "false-fronted" stores of the cattle days are yet to be glimpsed—relics of the vanishing old West.

Following the Missouri first—for more than a hundred miles—the track traverses the Fort Peck Indian Reservation country; on their lands some 1,800 Assinaboine and Yankton Sioux, many of whom took part in Sitting Bull's campaign's are nowadays thriftily farming. Poplar (692 miles) is the agency headquarters.

The Milk River is followed next—for nearly two hundred miles. Much of that grain-growing that has made Montana the champion of the United States in bushels to the acre is carried on along the Milk. Interesting are the dams and canals of the immense Milk River Irrigation Project. Near Chinook (894 miles) is the battlefield on which United States troops, under General Miles, defeated Chief Joseph and his Nez Perces. Near Havre (915 miles; altitude 2,480 feet) is old Fort Assinaboine; the Bear Paw mountains, outposts of the Rockies, rise out of the plains.

At Cut Bank in the foothills (1,044 miles; altitude 3,690 feet) the Great Northern begins its climb up the long east slope of the main range of the Rocky Mountains—across the reservation of the Blackfeet Indians. 3,000 of that one-time proud nation are here. Browning (1,078 miles; 4,440 feet) is the agency.

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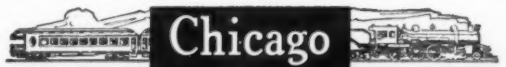

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